

APPENDIX A

Analysis of Traffic Conditions

**US 89 Browning to Hudson Bay Divide
STPP 58-1(19)0 CN 4045**

Analysis of Traffic Conditions in the US 89 Project Area

Traffic Data Collection

Existing traffic and accident data was gathered from Federal, State, and local information sources, and by conducting on-site traffic surveys. The on-site surveys included vehicle turning movement counts, and average travel time drives. In addition, a trucking industry survey was conducted by mail to determine existing, anticipated, and preferred truck traffic flow patterns.

Existing Traffic Volume Data

Existing 1998 traffic volume data was obtained from the Montana Department of Transportation (MDT) and the US Department of Transportation's Bureau of Transportation Statistics. A variety of information sources were required due to the complexity of traffic flows within the corridor study area. There are local, regional, and tourist generated traffic flows, which are seasonal and have a direct correlation with Glacier Park. The information collected included:

- 1998 traffic count data, including Annual Average Daily Traffic (AADT) vehicle classification (truck, RV, and bus)
- 1998 Glacier Park incoming traffic flow information for the Going-to-the-Sun Road at the St. Mary entrance

The following table summarizes the 1998 annual average traffic volumes for the Corridor Study area.

Table 1
Existing Traffic Volumes

Description	Location (reference post)	1998 AADT (all vehicles)	% Growth Rate (FUT)	Projected 2000 AADT (all vehicles)	Percent of Heavy Vehicles In AADT		
					truck	bus	RV
MT 464 (Duck Lake Rd) north of Starr School Rd	6.3	760	1.6	785	9.9	--	--
MT 464 (Duck Lake Rd) south of Starr School Rd	0.23	6,500	1.7	6,720	-	-	-
MT 464 (Duck Lake Rd) midway	12.8	550	1.6	570	-	-	-
MT 464 (Duck Lake Rd) east of US 89	33.8	640	1.6	660	-	-	-
US 89 north of MT 464 (Duck Lake Rd)	39.8	1,540	2.0	1,600	1.8	.025	4.5
US 89 north of Saint Mary	31.3	1,570	2.0	1,630	1.8	.025	4.5
US 89 south of Saint Mary	31.2	840	3.0	890	4.3	.05	8.8
Going-to-the-Sun Road – St Mary Entrance	-	1,460	2.0	1,520	-	-	-
Starr School Road midway	-	300	1.6	310	-	-	-
US 89 north of Looking Glass Rd	12	650	3.0	690	5.7	0.8	11.4
US 89 southeast of Looking Glass Rd	11.9	600	3.0	640	9.0	1.5	18
Looking Glass Road southwest of US 89	7.0	680	2.2	710	4.6	-	-
Looking Glass Rd north of US 2	1.4	1,210	2.2	1,260	5.6	-	-
US 2 northeast of Looking Glass Rd	210.0	1,710	2.9	1,810	11.0	0.3	3
US 2 southeast of Browning	221.3	2,680	2.9	2,840	5.9	.19	1.9
US 2/89 in Browning	220.6	4,520	2.9	4,790	3.5	.08	1.1
US 89 west of Browning	0.5	980	1.1	1,000	3.8	0.5	7.7

Growth rate percentages provided by the Montana Department of Transportation

The following functional classifications were provided by MDT.

Table 2
Functional Classification

Description	Existing Functional Classification
Starr School Road	Major Collector
Duck Lake Road	Major Collector
Looking Glass Road	Major Collector
US Highway 89	Minor Arterial
US Highway 2	Principal Arterial

Existing Accident Data

Accident data was collected for each of the five roadways indicated below:

- US 89 from Browning to Babb
- US 2 from East Glacier to Browning
- Starr School Road
- Duck Lake Road (Highway 464)
- Looking Glass Road (Highway 49)

Accident data was obtained from both MDT and the Blackfeet Nation Emergency Medical Services (EMS) in Browning for the period of October 1, 1994 through December 31, 1999. Glacier County police and the Blackfeet Law enforcement reports are included in these two agency reports.

Table 3
Accident Data Summary

US 89							
	Total	1994	1995	1996	1997	1998	1999
Total Number of Accidents	115	2	17	27	25	26	18
Location							
Intersection /Intersection related	3			1		1	1
Non-intersection	112	2	17	25	26	25	17
Accident Severity							
Fatal Accidents	2				2		
Property damage only	41		8	5	12	8	8
No. of injury accidents	72	2	9	22	11	18	10
Majority of accidents occurred							
Dry roadway	89	1	15	21	20	20	12
Clear day	62	1	11	13	15	12	10
Daylight	63	1	10	17	13	13	9
Single vehicle	84	0	0	25	21	22	16

Table 3 (continued)

US 2							
	Total	1994	1995	1996	1997	1998	1999
Total Number of Accidents	84	2	10	19	29	14	10
Location							
Intersection/Intersection related	18		4	2	3	3	1
Non-intersection	66	2	6	14	25	10	9
Accident Severity							
Fatal Accidents	3	0	0	0	2	0	1
Injury Accidents	35	2	6	7	12	5	3
Property damage only	46		4	12	15	9	6
Majority of accidents occurred							
Dry	42		7	6	13	10	6
Clear	34	1	5	6	11	7	4
Daylight	45	1	7	9	23	1	4
Single Vehicle	39			9	12	12	6

Starr School Road							
	Total	1994	1995	1996	1997	1998	1999
Total Number of Accidents	15		1	2	4	2	6
Location							
Intersection/Intersection related	1	NA			1		
Non-intersection	14	NA	1	2	3	2	6
Accident Severity							
Fatal Accidents	3	NA	0	0	0	0	3
Injury Accidents	12	NA	1	2	4	2	3
Property damage only	0	NA					
Majority of accidents occurred							
Dry	15	NA	1	2	4	2	6
Clear	12	NA	1	1	3	1	6
Daylight	8	NA	1	1	3	2	1
Dark-not lighted	7	NA		1	1		5
Single Vehicle	9	NA		1	1	2	5

Duck Lake Road							
	Total	1994	1995	1996	1997	1998	1999
Total Number of Accidents	56	1	3	20	18	4	10
Location							
Intersection/Intersection related	13	0	0	7	4	1	1
Non-intersection	43	1	3	13	14	3	9
Accident Severity							
Property damage only	15	1	2	6	3	2	1
Fatal Accidents	5	0	0	2	1	0	2
Injury Accidents	36	0	1	12	14	2	7
Majority of accidents occurred							
Dry	36		2	11	14	1	8
Clear	26	1	3	5	11		6
Daylight	29	1	3	9	8	2	6
Single Vehicle	33			11	9	3	10

Table 3 (continued)

Looking Glass Road							
	Total	1994	1995	1996	1997	1998	1999
Total Number of Accidents	34	1	3	3	13	4	10
Location							
Intersection/Intersection related	1						1
Non-intersection	33	1	3	3	13	4	9
Accident Severity							
Fatal Accidents	3	0	0	0	1	2	0
Injury Accidents	18	0	1	2	9	2	4
Property damage only	13	1	2	1	3	0	0
Majority of Accident occurred							
Dry	27		3	1	11	4	8
Clear	25	1	3	2	10	4	5
Daylight	20	1	2	2	6	2	7
Single Vehicle	27			3	12	4	8

Trucking Survey

Local and regional trucking companies were sent a brief questionnaire via mail to determine existing and future trucking usage of US 2, US 89, Duck Lake Road, Looking Glass Road, and Starr School Road. Trucking companies within Glacier County generally included those involved in logging, farming, commercial freighting and/or construction activities. Companies were also selected if they might service communities within the corridor study area (Browning, East Glacier, Kiowa, St. Mary, Babb, etc.), Glacier Park, or Canada. The survey gave those in the trucking industry an opportunity to voice concerns, observations, needs, suggestions, and opinions concerning current and future use and possible upgrades to the roadways.

Of 115 questionnaires sent out, 38 were completed and returned. Eight questionnaires were returned indicating that they do not travel within the US 89 Corridor Study area, and subsequently their responses were not included. Seven questionnaires were returned either because of incorrect addresses, or because they are now out of business.

Summary of Truck Survey

Survey Questions	YES	NO	All Year	Winter	Summer	Spring	# of trips/wk		
							A.M.	Midday	P.M.
1. Do your trucks use Highway 464 (Duck Lake Road) between Browning and Babb?	22	8	14	1	7	4	22	11	14
2. Do your trucks use Starr School Road between Browning and its intersection with US 89?	14	16	8	1	4	4	13	4	10
3. Do your trucks use US 89 between Browning and Kiowa?	9	21	5	0	2	0	2	2	3
4. Do your trucks use US 89 between Kiowa and St. Mary?	11	19	6	0	5	1	3	7	5
5. Do your trucks use US 89 between St. Mary and Babb?	18	12	9	0	6	2	12	8	8
6. Do your trucks use US 89 between Babb and the Canadian border (the Piegan border crossing)?	11	19	5	1	3	1	6	7	6
7. Do your trucks use the Going-to-the-Sun Road in Glacier Park?	5	25	0	0	5	1	0	0	0
8. Do your trucks use Highway 49 between East Glacier and Kiowa?	5	25	1	0	4	1	0	5	2
9. Do your trucks use US 2 between Browning and East Glacier?	26	4	19	0	4	1	25	20	24
10. Do your trucks use US 2/89 between Browning and US2/US89 junction (Southeast of Browning)?	23	7	15	0	2	1	21	15	15
11. Would a new route from Browning to Babb built to current design standards be beneficial to your operation?	18	9							
12. Do you expect to increase the number of trips on any of these routes?	7	21							
13. Which route do your trucks prefer to use between Browning and Babb?	US 89					Duck Lk. Rd.			
	2					22			

Conclusions from the responses provided:

- 73% of companies who responded to the survey use Montana 464 (Duck Lake Road)
- 47% use Starr School Road
- 30% use US 89 between Browning and Kiowa
- 37% use US 89 between Kiowa and St. Mary
- 60% use US 89 between St. Mary and Babb
- 37% use US 89 between Babb and the Canada border
- 17% use Going-to-the-Sun Road to either deliver goods to park businesses, or park-related construction activities
- 17% use Montana 49 (Looking Glass Road) between East Glacier and Kiowa
- 87% use US 2 between East Glacier and Browning
- 77% use US 2/89 from Browning to US2/US89 jct. southeast of Browning
- 67% desire a truck route built to current design standards between Browning and Babb
- 25% expect to increase their volume of traffic on roadways within the corridor
- 92% prefer Montana 464 (Duck Lake Road) over US 89

Onsite Traffic Surveys

Turning movements

Turning movement traffic counts were taken at the 5 intersections described below.

- US 89 and US 2 (located west of Browning)
- US 89 and Starr School Road (northwest of Browning)
- US 89 and Duck Lake Road (near Babb)
- Duck Lake Road and Starr School Road (in Browning)
- Central Avenue (US 2/89) and Duck Lake Road (in Browning)

Turning Counts were recorded during AM and PM peak traffic hours January 19-24, 2000 and on May 4, 2000.

Table 5
2000 Existing Turning Movements

Intersection	AM			PM		
	LT	THRU	RT	LT	THRU	RT
US 2/89 & MT 464 (Duck Lake Rd) **Signalized**						
MT 464 (Duck Lake Rd) SB	179		150	163		149
US 2/89 WB		177	99		375	191
US 2/89 EB	54	147		132	416	
MT 464 (Duck Lake Rd) & Starr School Rd						
MT 464 (Duck Lake Rd) NB	162	136		73	155	
MT 464 (Duck Lake Rd) SB		139	4		57	11
Starr School Rd EB	4		191	11		155
US 2 & US 89 (Browning)						
US 2 NB	3		50	1		81
US 89 WB	29	31		99	47	
US 89 EB		46	3		24	3
US 89 & Starr School Rd						
US 89 NB		5	4		2	5
US 89 SB	10	3		6	2	
Starr School Rd WB	1		2	1		1
US 89 & MT 464 (Duck Lake Rd) (north)						
US 89 NB		5	7		5	2
US 89 SB	8	9		8	3	
MT 464 (Duck Lake Rd) WB	3		2	1		5

Average Travel Times

Average travel times were determined by driving the existing roadways described below:

- US 2 from Browning to East Glacier 10.8 minutes
- Montana 464 (Duck Lake Road) Browning to US 89 near Babb 32.1 minutes
- US 89 from Browning to Highway 464 (Duck Lake Road) near Babb 48.6 minutes
- Starr School Road From MT 464 near Browning to US 89 13.3 minutes

Each stretch of highway was driven once in each direction, and the two travel times were averaged. Speed limits were driven depending on road conditions.

No significant delays were encountered due to operational problems.

Level of Service Criteria

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service (LOS) definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruption, comfort and convenience, and safety.

Six levels of service are deemed for each facility for which analysis procedures are available. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst. The following condensed definitions generally define the various levels of service. Each level of service is not a discrete condition, but rather a range of conditions for which boundaries are established.

Level of service A represents free flow conditions. Individual users are virtually unaffected by the presence of others in the traffic stream.

Level of service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable.

Level of service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by the interactions with others in the traffic stream.

Level of service D represents high-density, but stable, flow conditions. Small increases in traffic flow will generally result in the occurrence of operational problems at this level.

Level of service E represents operating conditions at or near the capacity level of a given facility. Operations at this level are usually unstable, because small increases in flow or minor disturbances in the traffic stream to breakdown.

Level of service F is used to define forced or breakdown flow. This condition exists whenever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable.

The Level of Service (LOS) analyses were conducted in accordance with the methods and criteria presented in the Transportation Research Board 2000 Highway Capacity Manual utilizing the Highway Capacity 2000 Software and Strong Concept's Signal 2000 a Highway Capacity Manual based signalized intersection capacity analysis and optimization software.

Level of Service for two way stop-controlled intersections is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole.

The following table taken from the Highway Capacity Manual lists the LOS criteria for control delay times.

Table 6
LOS Criteria for Stop Controlled Intersections

LOS	Control Delay per Vehicle (Sec. per vehicle)
A	0 to 10
B	11 to 15
C	16 to 25
D	25 to 35
E	36 to 50
F	More than 50

Level of Service for signalized intersections is evaluated on the basis of control delay per vehicle (in seconds per vehicle). Control delay includes initial deceleration delay, queue move up time, stopped delay, and final acceleration delay. The average control delay is estimated for each lane group and for the intersection as a whole. LOS is directly related to the control delay value.

The following table taken from the Highway Capacity Manual lists the LOS criteria for control delay times.

Table 7
LOS Criteria for Signalized Intersections

LOS	Control Delay per Vehicle (Sec. per vehicle)
A	0 -10
B	11 to 20
C	21 to 35
D	36 to 55
E	56 to 80
F	More than 80

Level of Service for two lane highways is evaluated on two criteria. Class I highways are evaluated on percent time following and average travel speed. Class II highways are evaluated only on percent time following.

The highways evaluated in this analysis are considered Class II highways.

The following table taken from the Highway Capacity Manual lists the LOS criteria percent time following.

Table 8
LOS Criteria for Class II Two Lane Highways

LOS	Percent Time Spent Following:
A	0 to 40
B	41 to 55
C	56 to 70
D	71 to 85
E	More than 85

Note: LOS F applies whenever the flow rate exceeds the segment capacity

Analysis of Existing Conditions

Levels of service, delays and flow rates were calculated for the major intersections and arterials within the study area. Accident data was analyzed for a 5-year period to determine accident rates and high-accident locations.

Intersection Analysis

The following intersections were analyzed to determine existing (2000) LOS values.

- US 89 & Duck Lake Road
- US 2 & US 89 west of Browning
- US 89 & Starr School Road
- Central Avenue & Duck Lake Road in Browning
- US 89 & Looking Glass Road
- Starr School Road & Duck Lake Road

Data from year 2000 turning counts and 1998 traffic volumes provided by the Montana Department of Transportation (MDT) were utilized in this analysis. Calculations were performed in accordance with methodology outlined in the Highway Capacity Manual (2000) and using Highway Capacity Software (HCS-2000). Intersection levels of service and delays are given for each intersection.

Table 9
2000 Stop-controlled Intersection Level of Service (LOS)

LOCATION	Approach Direction	AM PEAK		PM PEAK	
		Approach LOS	Approach Delay (sec.)	Approach LOS	Approach Delay (sec.)
US 89 & MT 464 (Duck Lake Road)	WB	A	8.6	A	9.0
US 2 & US 89	NB	A	9.0	A	8.8
US 89 & Starr School Road	WB	A	8.5	A	9.2
Starr School Road & MT 464 (Duck Lake Road)	EB	B	10.3	A	9.5

Table 10
2000 Signalized Intersection Level of Service (LOS)

LOCATION	AM PEAK		PM PEAK	
	Intersection LOS	Control Delay (sec.)	Intersection LOS	Control Delay (sec.)
US 2/89 & MT 464 (Duck Lake Road)	B	11.3	A	9.6

Accident Analysis

A review of accidents over a five-year period was used to assess existing safety problems. A qualitative comparison was then made to determine which areas raise particularly strong safety concerns if any.

Table 11
Accident Summary

Roadway Description	Total Fatalities 1994-1999	Total Injuries 1994-1999	Total Accidents 1994-1999	Accident Rate 1994-1999	Montana State Wide Accident Rate
US 89 – Browning to Babb	2	130	115	1.81	1.55
Looking Glass Rd.	3	34	34	2.27	1.38
Duck Lake Rd.	5	86	56	1.24	1.77
Starr School Rd.	3	35	15	2.05	1.38
US 2 – Browning to East Glacier	3	71	84	1.59	1.55

All accident rates shown are per million vehicle miles of travel and were obtained using the following formula.

$$\frac{(\text{Number of Accidents}) \times (1 \text{ million})}{(\text{Section Length in miles}) \times (\text{AADT}^*) \times (\# \text{ of years in days})}$$

*AADT = 1998 Annual Average Daily Traffic

63% of the accidents on all roads were single vehicles accidents. 73% of the single vehicle accidents were, on US-89 and Looking Glass Road.

US 89, Looking Glass Road and Starr School Road 5-year accident rates were high, when compared with statewide averages for similar highways in Montana (see Table 11). Segments of highways with noticeably high frequencies of accidents are noted below.

US-89

- Reference Post 20-21 - 19 accidents
- Reference Post 37.5-38.5 - 11 accidents

US 2

- Reference Post 221.5-223 - 19 accidents
- Reference Post 214.9-215.9 - 13 accidents

Duck Lake Road

- First 3.2 kilometers (2 miles) commencing in Browning - 19 accidents
- The last 9.7 kilometers (6 miles) - 15 accidents

Looking Glass Road

- Entire length - 34 accidents in 18 kilometers (11.2 miles).

Starr School Road

- Entire length - 15 accidents in 21.4 kilometers (21.4 miles).

Rural Two-lane Analysis

The arterials listed below (Table 12) were analyzed in accordance with methodology outlined in the Highway Capacity Manual 2000 and utilizing HCS-2000 software to determine their existing LOS values. These LOS values were calculated using existing geometric configurations and 2000 traffic volume data forecasted from 1998 data received from MDT. Threshold LOS values were obtained from the Montana Road Design Manual (MDT, April 1994) using the roadways functional classification provided by MDT.

Table 12
2000 Rural Two Lane LOS Summary

Description	Calculated LOS Value	Percent Time Following	MDT Threshold LOS Value
US 89 – Browning to Kiowa	A	29.8	C
US 89 – Kiowa to Hudson Bay Divide	B	49.0	C
US 89 – St. Mary to MT 464 (Duck Lake Road)	C	55.7	C
Looking Glass Road	A	33.0	C
Duck Lake Road	A	24.1	C
Starr School Road	A	25.2	C
US 2 – Browning to East Glacier	A	36.0	C

2025 Forecast Conditions

Traffic Forecasts

Intersection turning movements, annual Average Daily Traffic (AADT), 2025 volumes, and 2025 30th Highest Hour traffic volumes were calculated using 1998 AADT, 2000 turning movements and growth rates, specific to the different highways as shown in the Existing Traffic Volumes table on page 2. Standard formulas and methodology were provided by MDT to calculate the values depicted below.

Table 13
2025 Forecast Turning Movements

Intersection	AM			PM		
	LT	THRU	RT	LT	THRU	RT
US 2/89 & MT 46 4 (Duck Lake Rd) ** Signalized**						
Mt 464 (Duck Lake Rd) SB	366		306	333		304
US 2/89 WB		362	202		766	390
US 2/89 EB	110	300		270	850	
MT 464 (Duck Lake Rd) & Starr School Rd						
MT 464 (Duck Lake Rd) NB	241	202		109	231	
MT 464 (Duck Lake Rd) SB		207	6		85	16
Starr School Rd EB	4		284	16		231
US 2 & US 89 (Browning)						
US 2 NB	6		102	2		166
US 89 WB	59	63		202	96	
US 89 EB		94	6		49	6
US 89 & Starr School Rd						
US 89 NB		7	6		3	7
US 89 SB	15	5		9	3	
Starr School Rd WB	2		3	2		2
US 89 & MT 464 (Duck Lake Rd) (north)						
US 89 NB		8	11		8	3
US 89 SB	13	14		13	5	
MT 464 (Duck Lake Rd) WB	5		3	2		8

Table 14
2025 Forecast Traffic Volumes

Description	Location (reference post)	2025 AADT	2025 30 th - hr traffic volume
MT 464 (Duck Lake Rd) north of Starr School Rd intersection	-	1170	150
MT 464 (Duck Lake Rd) south of Starr School Rd intersection	0.23	10,240	1,230
MT 464 (Duck Lake Rd) midway	12.8	850	110
MT 464 (Duck Lake Road) east of US 89 (near Babb)	33.8	980	130
US 89 north of MT 464 (Duck Lake Rd)	39	2,630	580
US 89 north of Saint Mary	31	2,580	570
US 89 south of Saint Mary	31	1,990	440
Going-to-the-Sun Road – West of Saint Mary entrance	-	2,490	550
Starr School Rd midway	-	460	80
US 89 north of Looking Glass Road	12	1,450	320
US 89 southeast of Looking Glass Road	11.9	1,510	330
Looking Glass Road Southwest of US 89	7.0	1,220	300
Looking Glass Road North of US 2	-	2,170	480
US 2 Northeast of Looking Glass Road	210	3,660	600
US 2 Southeast of Browning	223	5,800	810
US 2/89 in Browning	220.6	9,800	1,370
US 89 west of Browning	0	1,320	290

Analysis of 2025 Forecast Conditions

Levels of service (LOS), delays and flow rates were calculated for the 2025 design year at major intersections and arterials within the study area. Several improvement alternatives were analyzed and mapped to determine the effects on existing roadways.

Intersection Level of Service (LOS) Analysis – 2025 forecast

Five intersections were analyzed using turning movement 2025 30th highest-hour forecast traffic volumes. All calculations were performed in accordance with methodology outlined in the Highway Capacity Manual 2000 and HCS-2000 software. Intersection LOS values and time delays are given for each intersection below.

Table 15
2025 Stop Controlled Intersection Level of Service (LOS)

LOCATION	Approach Direction	AM PEAK		PM PEAK	
		Approach LOS	Approach Delay (sec.)	Approach LOS	Approach Delay (sec.)
US 89 & MT 464 (Duck Lake Road)	WB	A	8.7	A	8.5
US 2 & US 89	NB	A	9.4	A	9.4
US 89 & Starr School Road	WB	A	8.5	A	9.2
Starr School Rd & MT 464 (Duck Lake Road)	EB	B	14.2	B	13.8

Table 16
2025 Signalized Intersection Level of Service (LOS)

LOCATION	AM PEAK		PM PEAK	
	Intersection LOS	Control Delay (sec.)	Intersection LOS	Control Delay (sec.)
US 2/89 & MT 464 (Duck Lake Road)	B	13.0	B	17.8

The acceptable LOS value provided by MDT for the intersections above is B. All intersections operate at or above this level. These intersections may require additional studies to determine future impacts if proposed routing changes are pursued.

Rural Two-lane Analysis-2025 forecast

The following arterials were analyzed in accordance with the methodology outlined in the Highway Capacity Manual 2000 and utilizing HCS-2000 software. Traffic data necessary for analysis was obtained from MDT and through field studies. This information was utilized to forecast 30th Highest Hour average traffic volumes and determine LOS values for the design year.

Table 17
2025 Rural Two-lane LOS

Description	Calculated LOS Value	Percent time following	MDT * Threshold LOS Value
US 89 – Browning to Kiowa	C	59.8	C
US 89 – Kiowa to Hudson Bay Divide	C	66.3	C
US 89 – St. Mary to Duck Lake Road	C	64.1	C
MT 49 (Looking Glass Road)	C	58.4	C
Duck Lake Road (MT 464)	A	30.0	C
Starr School Road	A	27.8	C
US 2 – Browning to East Glacier	C	63.8	C

* Acceptable LOS values were obtained from MDT.

Truck rerouting from US 89 to MT 464 (Duck Lake Road).

It appears that the majority of trucks using the roadways in and around Browning are of a local nature and not long haul trucks. It does not appear that there is a major terminal destination for long haul trucks along US 89. A best estimate would relocate 1 % of the trucks from US 89 to Montana 464 (Duck lake Road).

Existing Traffic:

US 89 West of Browning:

- Year 2000 - 1000 vehicles
- Trucks 3.7% = 37 trucks

Montana 464 (Duck Lake Rd) north of Starr School Road:

- Year 2000 - 785 vehicles
- Trucks 9.9% = 78 trucks

1 % of 1000 = 10 trucks shifted from US-89 to Duck Lake Road. 78+10=88 Trucks

785+10 = 795 vehicles on Duck Lake Road - Trucks 11 %

This shift results in a 1.4% increase in traffic on Duck Lake Road and a 0.01% decrease in US 89 traffic.

Alternative Analysis

Two highway improvement alternatives (and an option) and the ‘No-Build’ alternative were analyzed to determine whether limited road improvements would result in higher LOS values.

Alternative A – No Build

The 2025 LOS values for US 89 between Browning and Hudson Bay Divide, assuming no improvements, are shown in Table 18. US 89 was broken into two segments due to distinct differences in roadway geometrics and traffic flow characteristics.

Table 18
2025 LOS Summary Alternative A

Description	Calculated LOS Value	MDT Threshold LOS Value	Percent Time Following
US 89 – Browning to Kiowa	C	C	59.8
US 89 – Kiowa to Hudson Bay Divide	C	C	66.3

The accident rate would not decline. In all probability it would increase with the lower LOS.

Alternative B– Improve US 89 from Browning to Hudson Bay Divide

Improvements would consist of:

- Widening travel lane width to 3.6 meters (12 feet)
- Widening shoulder width to 1.2 meters (4 feet)
- Increasing curve radius
- Higher frequency of passing zones
- Improving roadside drainage features
- Adding pullouts and scenic vista points
- Installing guardrail as needed

Table 19
2025 LOS Summary Alternative B

Description	Calculated LOS Value	MDT Threshold LOS Value	Percent Time Following
US 89 – Browning to Kiowa	C	C	59.8
US 89 – Kiowa to Hudson Bay Divide	C	C	61.1

Since the majority of accidents were single vehicle accidents, the accident rate would in all probability decrease due to the wider driving lanes, the increased shoulder width, and the installation of guardrail.

Alternative C – Improve US 89 from Browning to Hudson Bay Divide

Improvements would be the same as Alternative B with the exception of widening shoulders to a width of 1.8 meters (6 feet).

The level of service would remain the same as Alternative B. The probable accident reduction would be the same.

Option: – Improve Montana 464 (Duck Lake Road)

Improvements would consist of:

- Widening travel lane width to 3.6 meters (12 feet)
- Widening shoulder width to 1.2 meters (4 feet)
- Increasing curve radius
- Improving roadside drainage features
- Installing guardrail as needed
- Repair Duck Lake Road to prevent frost heaving
- Enhance parking area at Cut Bank Creek.

The level of service would continue to remain at LOS A.

APPENDIX B

Highway Traffic Noise Preliminary Screening

HIGHWAY TRAFFIC NOISE PRELIMINARY SCREENING

US 89 Browning — Hudson Bay Divide Corridor Study

STPP 58-1(19)0~CN 4045

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May 2004 Draft

Highway Traffic Noise Preliminary Screening

Introduction

This appendix presents the results of the preliminary screening for traffic noise for the US Highway 89 (US 89) improvement project. The screening was conducted in accordance with the *Traffic Noise Analysis and Abatement: Policy and Procedure Manual* (MDT 2001).

The US 89 improvement project has been proposed by the Montana Department of Transportation (MDT) on the Blackfeet Indian Reservation in Glacier County, Montana (Figure B-1). The proposed project consists of improvements to 41 kilometers (25.5 miles) of US 89 between the town of Browning and the Hudson Bay Divide, approximately 8.7 kilometers (5.4 miles) south of the town of Saint Mary (Figure B-2). Under the two action alternatives being considered, no new travel lanes would be added to the existing two-lane highway. However, the road would be realigned at several locations, and it would be rebuilt or repaved to provide standard lane widths, as well as adequate shoulders and roadside ditches. In addition to the improvements to US 89, the project includes optional improvements to Duck Lake Road (Montana Highway 464), which extends east from its intersection with US 89 north of Saint Mary and then south to Browning (Figure B-2). The optional improvements include repaving approximately 11.2 kilometers (7 miles) of Duck Lake Road starting at its intersection with US 89 north of Saint Mary, realigning Duck Lake Road where it currently takes a right-angle curve approximately 29 kilometers (18 miles) north of Browning, and providing a formal paved off-road parking area where Duck Lake Road crosses Cut Bank Creek, approximately 8 kilometers (5 miles) north of Browning. No new lanes would be added to Duck Lake Road. As part of the optional improvements, Duck Lake Road would be formally designated as an alternate truck route to US 89.

Screening Results

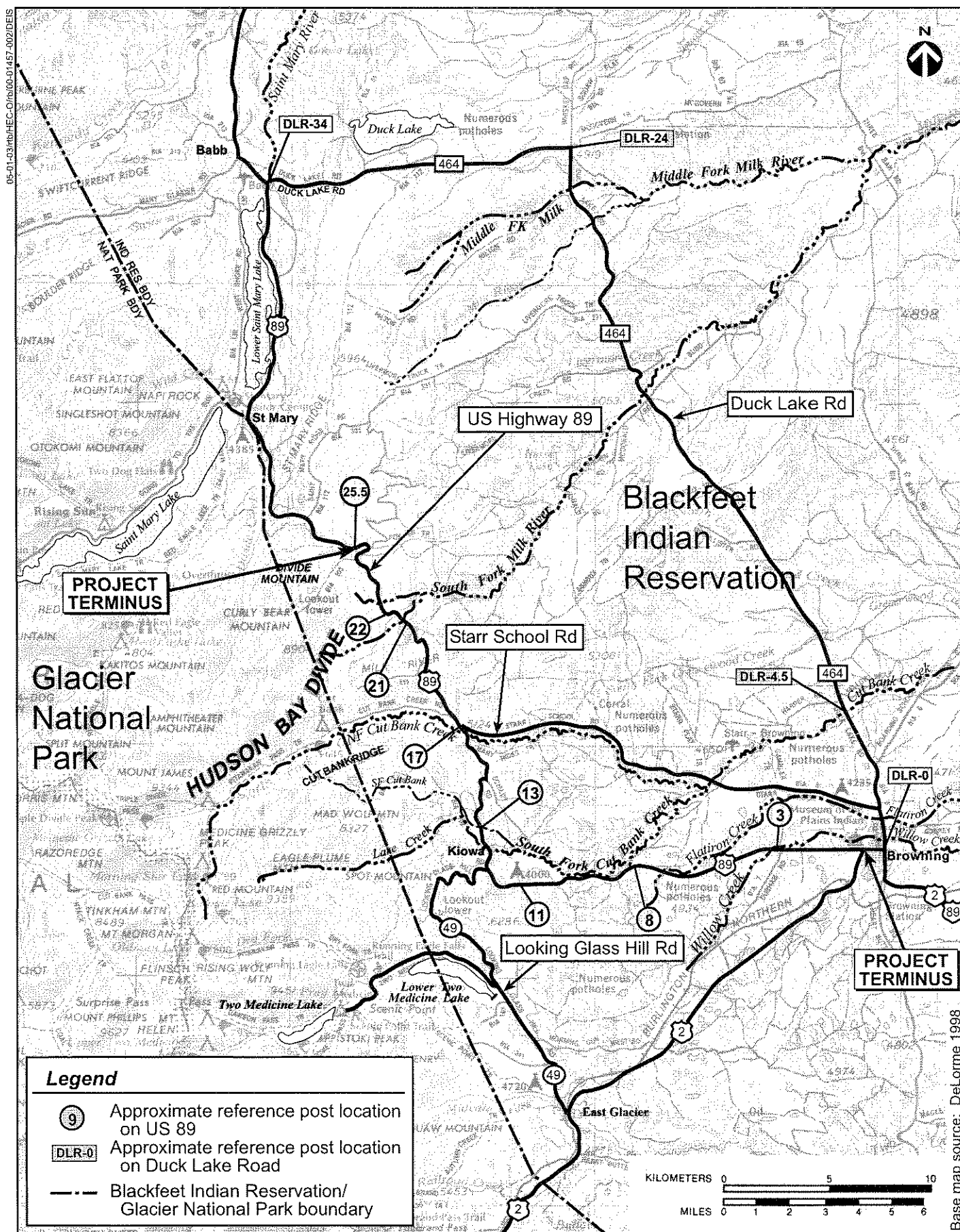
The overall conclusion reached on the basis of the screening results is that a detailed noise analysis is not needed for the US 89 project.

The first step in the screening procedure described in the manual (MDT 2001) is to determine whether the project under consideration is a Type I project. Type I projects typically require a detailed noise analysis, whereas projects that are not Type I projects do not. A Type I project is defined in the Code of Federal Regulations (CFR), Title 23, Section 772, as follows:

A proposed Federal or Federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through lanes. More specifically, a Type I project is any project that has the potential to increase noise levels at adjacent receivers. Such a project specifically creates a totally new noise source, or increases the volume or speed of traffic or moves traffic closer to receivers. The addition of an interchange/ramp/auxiliary lane/truck climbing lane to an existing highway is considered to be a Type I project. A project to widen an existing ramp by a full lane-width is also considered to be a Type I project.



Figure B-1. Vicinity map of the US 89 improvement project, Montana.



Both the improved US 89 and the improved Duck Lake Road would be two-lane roadways in substantially the same location as the existing two-lane roadways. The project would not increase traffic on US 89: traffic volumes are expected to be essentially the same under all alternatives, including the no-build alternative. Truck volumes could increase along Duck Lake Road as a result of the formal designation of that road as an alternate truck route. The project would not add an interchange or a new climbing lane. The project would not increase the speed of traffic on either road, particularly where there are receivers. Because the project involves realignments at several locations, and truck volumes could increase along Duck Lake Road, it would most likely be considered a Type I project.

The second step in the screening procedure is to determine whether there would be any potentially impacted receivers within 150 meters (500 feet) of the roadway. If there are no potentially impacted receivers within 150 meters of the roadway, a detailed noise analysis is not necessary. The procedure manual (MDT 2001) defines impacted receivers as “generally residences that will receive a traffic noise impact from the construction of a project.”

A traffic noise impact is an impact that results when certain noise thresholds are reached or exceeded. Noise impacts are determined for a future design year (2025 for the US 89 project), which is typically several to many years after the project becomes operational. A noise level is measured as an equivalent sound level (L_{eq}), which is defined as the equivalent steady-state sound level that in a stated period of time contains the same acoustic energy as the actual measured time-varying sound level during the same time period.

The conclusion reached on the basis of the second step of the screening procedure is that there are no potentially impacted receivers. Along US 89, implementation of any of the action alternatives would result in no increase in traffic volumes. Any realignments that are proposed along US 89 would move traffic no closer to any receivers. Along Duck Lake Road, implementation of the proposed improvements would not result in realignments that would move traffic closer to any receivers. The increase in truck traffic along Duck Lake Road would be minor and would have no material effect on noise levels along that road. Details of the assessment leading to these conclusions are provided in the following sections.

US 89 Assessment of Potentially Impacted Receivers

The project corridor along US 89 is divided into two segments: the southeasterly segment extending from Browning to Kiowa and the northerly segment extending from Kiowa to the Hudson Bay Divide. Along the southeasterly segment, there are residences or other potentially impacted receivers near the roadway, particularly near Browning and at Kiowa. The existing roadway in this segment has moderate horizontal and vertical curves, and the proposed roadway realignments in this segment are limited.

Along the northerly segment, there are no residences or potentially impacted receivers near the roadway. The existing roadway goes through hilly country with numerous horizontal and vertical curves, and the proposed roadway realignments in this segment are more extensive. The

following list provides a breakdown of realignments within the project corridor along US 89; station numbers are in meters and reference posts (RPs) are in miles.

- Between the Browning terminus of the project at station 30 (RP 0.0) and approximately station 8000 (RP 5.0), the new road centerline is in the same alignment as the existing road centerline. There are approximately 10 to 15 residences in proximity to the road along this 8-kilometer (5-mile) stretch of the corridor.
- Between approximately station 8000 (RP 5.0) and station 8600 (RP 5.3), the new centerline would deviate slightly to the north of the existing centerline. At this location, there is a residence approximately 100 meters (330 feet) south of the roadway; therefore, the alignment shift, although quite minor, would move the roadway slightly farther from this residence. There is no residence north of the roadway at this location.
- Between stations 8600 (RP 5.3) and 14700 (RP 9.1), the new roadway would follow the existing roadway, except for a few slight deviations of several meters. At the locations of these deviations, there are no residences near the realignment.
- Between approximately stations 14700 (RP 9.1) and 14950 (RP 9.3), the centerline of the new roadway would be shifted to the south. At this location, there is a residence approximately 50 meters (165 feet) north of the existing roadway; therefore, the shift in alignment would move the roadway farther from this residence. There is no residence south of the roadway at this location.
- Between approximately stations 14950 (RP 9.3) and 15800 (RP 9.8), the centerline of the new roadway would be coincident with that of the existing roadway.
- Between approximately stations 15800 (RP 9.8) and 16180 (RP 10.0), the roadway centerline would shift slightly to the north. At this location, the mapping shows a fenced area north of the roadway that appears to include a small adjacent structure with dimensions of approximately 3.6 by 7.3 meters (12 by 24 feet). This structure may be a residence; however, it is more than 180 meters (591 feet) from both the existing and new roadway alignments.
- Between approximately stations 16180 (RP 10.0) and 18100 (RP 11.2), the centerline of the new roadway would be coincident with that of the existing roadway.

- Between approximately stations 18100 (RP 11.2) and 18900 (RP 11.7), the centerline of the new roadway would deviate substantially (up to 50 meters [165 feet] or so) from the existing centerline; however, there are no residences anywhere in the vicinity.
- Between approximately station 18900 (RP 11.7) and Kiowa (station 22500; RP 14.0), the centerline of the roadway follows the existing centerline, except for a significant deviation (50 meters [165 feet] or more) between stations 21250 (RP 13.2) and 21870 (RP 13.6), approximately 0.6 kilometers (0.4 miles) south of Kiowa, where there are no residences in the vicinity of the existing or the new roadway alignments.
- At Kiowa, there are a store and a campground. At this location, the centerline of the new roadway would be coincident with that of the existing roadway. Just north of Kiowa, the new roadway would be realigned toward the east, away from the Kiowa store and campground.
- In the hilly portion of the northerly segment (north of Kiowa), there would be several substantial horizontal realignments (deviating significantly more from the centerline of the existing roadway than those in the Browning to Kiowa segment). However, there are no residences within 150 meters (500 feet) of either the existing or the new roadway centerlines.

On the basis of this assessment, it has been concluded that the realignments proposed for US 89 would not result in increased noise levels for receivers. Furthermore, in no areas would existing shielding near receivers be eliminated or compromised. In general, the roadway goes through country with little vegetation. Improvement of the segment between Browning and Kiowa, where there are receivers near the roadway, would involve only moderate changes in vertical and horizontal alignment, and no existing topographic barriers would be eliminated or compromised. Therefore, there are no potentially impacted receivers along the US 89 portion of the project.

Duck Lake Road: Assessment of Potentially Impacted Receivers

The project includes optional improvements to Duck Lake Road at three locations:

- At the intersection of Duck Lake Road with US 89 north of Saint Mary, Duck Lake Road would be realigned east of US 89 to create a horizontal curve and an intersection close to, or equal to, a right angle. There are no receivers east of US 89 (Duck Lake Road extends east from US 89) in the vicinity of this realignment.

- Approximately 9.7 kilometers (6 miles) of the roadway east of its intersection with US 89 north of Saint Mary would be repaved but not realigned.
- The right-angle curve approximately midway between US 89 north of Saint Mary and Browning would be realigned to increase the radius of the curve; however, there are no residences in the vicinity of this realignment.
- A formal paved off-road parking area would be created at the Cut Bank Creek bridge, in a location that is already being used for parking, and no new noise sources would be created. In addition, there are no receivers within 150 meters of the parking area.

The optional improvements along Duck Lake Road would neither eliminate nor compromise any existing noise shielding for receivers. The roadway goes through country with little vegetation, and the improvements would involve only moderate changes in topography; therefore, no existing topographic barriers would be eliminated or compromised. On the basis of this assessment, the three optional improvements along Duck Lake Road would not result in increased noise levels for receivers.

The formal designation of Duck Lake Road as an alternate truck route could increase truck traffic on Duck Lake Road, thereby increasing noise levels along that road. A traffic analysis conducted for the project has indicated that, at a maximum, 10 additional trucks per day could travel along Duck Lake Road after its redesignation as an alternate truck route. This additional traffic would be less than one additional truck per hour, which would not result in any material or discernible increase in noise levels (measured as L_{eq}) for receivers. Therefore, there are no potentially impacted receivers along the Duck Lake Road portion of the project.

References

MDT. 2001. Traffic Noise Analysis and Abatement: Policy and Procedure Manual. Prepared by Montana Department of Transportation, Environmental Services, Helena, MT. June 2001.

APPENDIX C

Form AD-1006 Farmland Conversion Impact Rating

PART 1 (To be completed by Federal Agency)		1. Date of Land Evaluation Request May 5, 2003		2. Sheet 1 of 1			
3. Name of Project US 89 – Browning to Hudson Bay Divide		4. Federal Agency Involved USDOT – FHWA					
5. Proposed Land Use Highway right-of-way		6. County and State Glacier County, Montana		7. Type of Project: Corridor <input checked="" type="checkbox"/> Other <input type="checkbox"/>			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS		2. Person Completing the NRCS parts of this form			
3. Does the site or corridor contain prime, unique ,statewide or local important farmland? Yes <input type="checkbox"/> No <input type="checkbox"/> (If no, the FPPA does not apply - Do not complete additional parts of this form)				4. Acres Irrigated	5. Average Farm Size		
6. Major Crop(s)		7. Farmable Land in Government Jurisdiction Acres: %		8. Amount of Farmland As Defined in FPPA Acres: %			
9. Name of Land Evaluation System Used		10. Name of Local Site Assessment System		11. Date Land Evaluation Returned by NRCS			
PART III (To be completed by Federal Agency)				Alternative Site Rating			
				Site A – US 89 widened to 32 feet	Site B – US 89 widened to 36 feet	Site C – optional improvements to Duck Lake Road	Site D
A. Total Acres To Be Converted Directly				373	381	91	
B. Total Acres To Be Converted Indirectly, Or To Receive Services				0	0	0	
C. Total Acres in Site				580	590	239	
PART IV (To be completed by NRCS) Land Evaluation Information							
A. Total Acres Prime and Unique Farmland							
B. Total Acres Statewide and Local Important Farmland							
C. Percentage of Farmland in County or Local Govt. Unit to be Converted							
D. Percentage of Farmland in Govt. Jurisdiction with Same or Higher Relative Value							
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland to be Serviced or Converted (Scale of 0 - 100 Points)							
PART VI (To be completed by Federal Agency) Corridor or Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b & c))				Max. Points Corridor Other			
1. Area in Nonurban Use				15 15			
2. Perimeter in Nonurban Use				10 10			
3. Percent of Site Being Farmed				20 20			
4. Protection Provided by State and Local Government				20 20			
5. Distance from Urban Built-up area				0 15			
6. Distance to Urban Support Services				0 15			
7. Size of Present Farm Unit Compared to Average				10 10			
8. Creation of Non-Farmable Farmland				25 10			
9. Availability of Farm Support Services				5 5			
10. On-Farm Investments				20 20			
11. Effects of Conversion on Farm Support Services				25 10			
12. Compatibility with Existing Agricultural Use				10 10			
TOTAL CORRIDOR OR SITE ASSESSMENT POINTS				160			
PART VII (To be completed by Federal Agency)							
Relative Value of Farmland (from Part V above)				100			
Total Corridor or Site Assessment (From Part VI above or a local site assessment)				160			
TOTAL POINTS (Total of above 2 lines)				260			
PART VIII (To be completed by Federal Agency after final alternative is chosen)							
1. Corridor or Site Selected:				2. Date of Selection:		3. Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>	
4. Reason For Selection:							
Signature of person completing the Federal Agency parts of this form:						DATE	

APPENDIX D

Section 4(f) Evaluation

Section 4(f) Evaluation

The Montana Department of Transportation and the Federal Highway Administration propose to improve a 41-kilometer (25.5-mile) section of the existing US 89 corridor extending from Browning, Montana, west and north to Hudson Bay Divide. The preferred alternative of the proposed US 89 improvement project would widen the US 89 roadway from Browning to Hudson Bay Divide to an overall roadway width of 11 meters (36 feet). This alternative would provide two 3.6-meter (12-foot) lanes with a 1.8-meter (6-foot) shoulder on each side, including a 0.45-meter (1.5-foot) rumble strip. The proposed project would affect two bridges eligible for listing in the National Register of Historic Places and four historic roads covered under a programmatic agreement between Montana Department of Transportation and Montana State Historic Preservation Office. These historic properties are considered to be Section 4(f) resources.

Section 4(f) of the 1966 Department of Transportation Act, codified as USC §138 and 23 CFR §771.135, requires that no federal approval may be granted for a project using land from a publicly owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless:

- i) There is no feasible and prudent alternative to the use of such land, and
- ii) The proposed action includes all possible planning to minimize harm to the property resulting from such use.

The Federal Highway Administration must prepare a Section 4(f) evaluation when a Section 4(f) resource is used by a project. This Section 4(f) evaluation includes a description of the proposed project purpose and need, the alternatives considered, the Section 4(f) resources affected, and measures to avoid or minimize impacts on these Section 4(f) resources. This evaluation also discusses the basis for concluding that the proposed action includes all possible planning to minimize harm to Section 4(f) resources and summarizes the coordination efforts with other agencies to identify suitable minimization measures.

Purpose of the Proposed Action

The purpose of the project is to improve traffic flow, roadway safety, and roadway maintenance within the US 89 corridor.

The US 89 corridor from Browning to Hudson Bay Divide is a critical portion of the roadway network serving the Blackfeet Indian Reservation and the east entrance of Glacier National Park. This corridor extends north to the Port of Piegan at the Canadian border and southeast to Yellowstone National Park, representing an important recreational and truck route (Figures 1 and 2). Because of its location on the Blackfeet Indian Reservation, and its connection to several National Parks and the Port of Piegan border station, US 89 accommodates a wide variety of vehicular traffic, including cars, trucks, and recreational vehicles.

All of these types of vehicles have different movement characteristics (e.g., speed and frequency of stops) resulting in different sets of desirable roadway characteristics (e.g., speed limit designations, site distances, location and frequency of turnouts, rest facilities). The existing two-lane roadway is narrow, with sharp curves and few turnouts, providing few opportunities for passing slow-moving vehicles and bicyclists. Because of these roadway characteristics and the variety of vehicles using the roadway, it is not possible to drive at the designated speed limits; vehicles must travel more slowly. Average daily traffic volumes are projected to increase over the next 25 years, exacerbating the effects of the roadway configuration on traffic flow.

Many of the factors that contribute to the need for action based on traffic flow are also factors affecting roadway safety. Sharp curves, narrow shoulders, and numerous roadside obstacles such as steep cut-and-fill slopes reduce the overall safety of the roadway. None of the existing US 89 roadway between Browning and Hudson Bay Divide meets current state and federal roadway design requirements. The diverse mix of traffic and traveling characteristics results in traveler safety issues associated with vehicle speed and frequency of stops. The roadway has insufficient roadway shoulders and pullout areas for bicycle and pedestrian use. There are few places where it is suitable to pass slow-moving vehicles or for slow-moving vehicles to pull off the road and stop. Accidents have become increasingly common, especially in the mountainous section of the roadway north of Kiowa. The accident rate on US 89 from 1994 to 1999 is 1.81 accidents per million vehicle miles of travel, compared with a Montana state average accident rate of 1.55 for similar roads. The absence of right-of-way fencing allows large domestic animals to enter the roadway. Poor sight distance and lack of adequate clear zone contribute to collisions with wild and domestic animals.

US 89 is becoming increasingly difficult and expensive to maintain. The structural section of the roadway has deteriorated to the extent that large areas are rough and uneven. Pavement overlays are no longer a viable option for roadway maintenance because the paved surface, which becomes narrower with each successive overlay, is already dangerously narrow. Snow removal, particularly in the segment of US 89 from Kiowa to Hudson Bay Divide, is complicated by a lack of snow storage areas. Steep cut slopes or vegetation within a few feet of the roadway contribute to drifting and make snow removal slow and expensive.

To address the need for improved traffic flow and safety on US 89, this project also addresses the potential for designating Duck Lake Road as an alternate route for truck traffic traveling between Babb (and points north of Babb) and Browning (and points west, south, and east of Browning). Duck Lake Road is currently used by numbers of trucks, many of which use Duck Lake Road in preference to traveling the curvier alignment of US 89 north of Kiowa and to avoid conflicts with tourist traffic on US 89. As an alternate route to US 89, Duck Lake Road is particularly important for trucks (and other vehicles) in winter, when US 89 can be temporarily snowbound. Duck Lake Road is farther from the Rocky Mountain front than US 89 and has more moderate grades, and so is less often closed due to adverse winter conditions. The proposed improvements to Duck Lake Road address localized inadequate alignment and road surface conditions, and are necessary to maintain safe travel opportunities for all vehicles throughout the year in the Babb to Browning travel corridor. For this reason, the proposed improvements to Duck Lake Road are an essential element in meeting the purpose and need for the project. Specifically, the Duck

Lake Road improvements are necessary to meeting the following project objectives (see discussion of project objectives in Chapter 1):

- Accommodate commercial traffic along US 89 or parallel routes.
- Ensure that critical links in the roadway network are available on a year-round basis.

Alternatives under Consideration

Alternatives under consideration include a no-build alternative, two action alternatives, and one option. The no-build alternative would maintain the existing road configuration. Alternative B would widen US 89 to an overall width of 9.8 meters (32 feet). Alternative C would widen US 89 to an overall width of 11 meters (36 feet). The Duck Lake Road Alternate Route would improve portions of Duck Lake Road to ensure that the road could perform as a truck route. The alternatives under consideration are described in detail in Chapter 2, Alternatives.

Section 4(f) Resources in the US 89 Project Area

Four historic roads in the project area are covered by a programmatic agreement and therefore are considered Section 4(f) resources. Two historic bridges in the US 89 project corridor are eligible for listing in the National Register of Historic Places. While there are no publicly owned parks, wildlife or waterfowl refuges, or recreation areas located within the project corridor, Glacier National Park is accessible from the project corridor. Locations of the historic resources discussed below are shown on maps appended to this evaluation. The location of Glacier National Park in relation to the project corridor is shown on Figure 2. Table D-1 summarizes the Section 4(f) resources in the project area, their eligibility, project effects, and measures to minimize harm.

Blackfeet Highway (Site 24GL846)

US 89 between Kiowa and the Canadian border follows the route of the original Blackfeet Highway. The Blackfeet Highway, which ran from East Glacier to Canada, was paved around 1928. Long, intact stretches of an old road grade between Saint Mary Ridge/Hudson Bay Divide and the divide between North Fork Cut Bank Creek and South Fork Cut Bank Creek are evident in the project corridor. The stretches of road exhibit a raised, constructed bed or grade. Some of the segments between Kiowa and Hudson Bay Divide show badly weathered and fragmented pieces of asphalt; others exhibit no asphalt at all. There are numerous two-track roads and trails with no constructed grade in the area, many of which are currently used for access to residences, recreation areas, and hunting areas.

Table D-1. Summary of Section 4(f) resources in the project area, eligibility, effects, and measures to minimize harm.

Resource	NRHP Eligibility	Effects	Measures to Minimize Harm
Blackfeet Highway (site 24GL846)	Protected under programmatic agreement between MDT and FHWA; determination of significance or eligibility not necessary.	Segments would be eliminated where highway crosses US 89.	Road is subject to requirements in programmatic agreement (Appendix D). Prior to removal, road would be photographed and described in detail in a written summary and historic record.
Browning to Babb to Saint Mary Stage Road (site 24GL208)	Protected under programmatic agreement between MDT and FHWA; determination of significance or eligibility not necessary.	Road would be eliminated in Duck Lake improvement area 3 where road crosses Duck Lake Road.	Road is subject to requirements in programmatic agreement (Appendix D). Prior to removal, road would be photographed and described in detail in a written summary and historic record.
Old Duck Lake Road (site 24GL209)	Protected under programmatic agreement between MDT and FHWA; determination of significance or eligibility not necessary.	Road would be eliminated in Duck Lake Road improvement areas 2 and 3 and where road crosses Duck Lake Road.	Road is subject to requirements in programmatic agreement (Appendix D). Prior to removal, road would be photographed and described in detail in a written summary and historic record.
Browning to Peksan Road (site 24GL210)	Protected under programmatic agreement between MDT and FHWA; determination of significance or eligibility not necessary.	Road would be eliminated in Duck Lake Road improvement area 2 and where road crosses Duck Lake Road.	Road is subject to requirements in programmatic agreement (Appendix D). Prior to removal, road would be photographed and described in detail in a written summary and historic record.
South Fork Cut Bank Creek / Kiowa Bridge (site 24GL212)	Eligible	Bridge would be removed under Alternatives B and C.	Prior to removal, bridge would be photographed, measured, and described in detail in a written summary and historic record.
South Fork Milk River Bridge (site 24GL213)	Eligible	Bridge would be modified under Alternatives B and C.	A portion of the bridge would be preserved and the other side would be reconstructed to look like the original arch. Prior to modification, the existing bridge would be photographed, measured, and described in detail in a written summary and historic record. (Pending further analysis, this bridge may require replacement as described for the South Fork Cut Bank Creek bridge).
Glacier National Park	Not applicable	No direct acquisition; no constructive use; some delays for travelers during construction.	Construction on alternate route (Duck Lake Road) would not occur while construction of US 89 is occurring; travelers would be informed of potential construction delays along US 89.

The Blackfeet Highway is a historic road protected under a programmatic agreement between the Montana Department of Transportation and the Montana State Historic Preservation Office (see Appendix D). Under that programmatic agreement, neither a determination of significance nor National Register eligibility is necessary.

Browning to Babb to Saint Mary Stage Road (Site 24GL208)

Copies of General Land Office maps of 1907 obtained during project research variously label the road from Browning to Lower Saint Mary Lake and the Saint Mary River area as “Browning and Babb Road,” “Browning to Babb Stage Road,” and “Saint Mary’s Stage Road Browning to Babb.”

Routes of the two historic roads were very similar from Browning just south of the Dry Fork Milk River. The Browning to Babb to Saint Mary Stage Road angled in a northwest direction from Dry Fork Milk River to the southwest corner of Duck Lake. Evidence of the Browning to Babb to Saint Mary Stage Road is visible in improvement areas 2 and 3 on Duck Lake Road.

The Browning to Babb to Saint Mary Stage Road is a historic road protected within a programmatic agreement between the Montana Department of Transportation and the Montana State Historic Preservation Office (appended to this evaluation). Under that programmatic agreement, neither a determination of significance nor National Register eligibility is necessary.

Old Duck Lake Road (Site 24GL209)

A well-constructed (raised) abandoned road grade, built from 1925 to 1931, is clearly visible on the ground and in aerial photos generally paralleling the present alignment of Duck Lake Road. This historic road is referred to as the Old Duck Lake Road for the purposes of this analysis. It departs in some instances from the modern Duck Lake Road by approximately 1.6 kilometers (1 mile) to the south but eventually rejoins the modern alignment just north of the Middle Fork Milk River, where the modern road curves at reference post DLR-24.

The route of Old Duck Lake Road is similar from Browning just south of the Dry Fork Milk River. Old Duck Lake Road continues north, crossing the Dry Fork Milk River and the Middle Fork Milk River before turning west not far to the north of the Middle Fork Milk River. Old Duck Lake Road continues generally westward toward Duck Lake. Near the southwest corner of Duck Lake, Old Duck Lake Road rejoins Babb to Browning to Saint Mary Stage Road.

Old Duck Lake Road is a historic road protected within a programmatic agreement between the Montana Department of Transportation and the Montana State Historic Preservation Office (appended to this evaluation). Under that programmatic agreement, a determination of significance or National Register eligibility is not necessary.

Browning to Peskan Road (Site 24GL210)

This site is also known as the Babb to Peskan Road. A 1907 General Land Office map for township range coordinates 36N, 12W shows a road extending north labeled “Browning to Peskan” that branched off the Browning to Babb to Saint Mary Stage Road just south of the Dry Fork Milk River. Evidence of this road was observed in improvement area 2 on Duck Lake Road and consisted of a remnant roadbed.

The Browning to Peskan Road is a historic road protected within a programmatic agreement between the Montana Department of Transportation and the Montana State Historic Preservation Office (appended to this evaluation). Under that programmatic agreement, a determination of significance or National Register eligibility is not necessary.

South Fork Cut Bank Creek/Kiowa Bridge (Site 24GL212)

The South Fork Cut Bank Creek/Kiowa bridge is located in the proximity of reference post 13 in the US 89 corridor (Figure 5). The bridge is part of the US 89 system and conveys South Fork Cut Bank Creek underneath the roadway. A pullout for recreational access to the river is located to the northwest of the bridge. This pullout provides parking opportunities to view the structure; however, the bridge is not labeled as a historic structure, and there is no established viewing area.

The structure is a rock-faced concrete arch bridge with an approximately 6.2-meter (20-foot) opening. The bridge measures 9 meters (30 feet) in length and 6 meters (20 feet) in width. The bridge contains hand-placed flagstone railing and detail work. The bridge was built in 1928 during construction of the Blackfeet Highway. The bridge is eligible for listing in the National Register of Historic Places.

The bridge appears to be in poor condition and would be replaced as part of this project. The bridge opening does constrain streamflow, creating a pool on the upstream side of the bridge and causing erosion during high flows. Further, the bridge cannot be brought to current standards. It is too narrow, the rails are inadequate, and the basic structure can not be made as strong as is now required.

South Fork Milk River Bridge (Site 24GL213)

The South Fork Milk River bridge is located in the proximity of reference post 21.7 in the US 89 project corridor (Figure 5). The bridge is part of the US 89 highway system and conveys the South Fork of the Milk River underneath the roadway. At the bridge, there is no sign indicating that the bridge is a historic structure and there is no established viewing area.

The structure is a rock-faced concrete arch bridge with a 6.2-meter (20-foot) opening and measures approximately 9 meters (30 feet) in length and 6 meters (20 feet) in width. The bridge contains hand-placed flagstone railing and detail work. The bridge was constructed in 1928

during construction of the Blackfeet Highway. The bridge is eligible for listing in the National Register of Historic Places.

The bridge is reportedly structurally sound and does not constrict streamflow.

Glacier National Park

Glacier National Park is a destination park, meaning tourists typically travel a substantial distance to visit the park and spend several days in the area. Within the project area, US 89 is part of an important scenic loop, consisting of Highway 2, Going-to-the-Sun Road, US 89 and Looking Glass Hill Road, that is frequently traveled by tourists visiting the project area. Outside the project corridor, US 89 provides access to the eastern end of Going-to-the-Sun Road, which is one of Glacier National Park's premier attractions and is traveled by nearly 2 million visitors each year. Going-to-the-Sun Road, the only road that traverses the entire width of Glacier Park, connects Lake McDonald on the west with St. Mary Lake on the east and provides the only access to many of the Park's other main attractions. The road is open to motorists from early June to mid October. During winter months, segments of Going-to-the-Sun Road are accessible for cross-country skiing and snowshoeing. US 89 also serves as a major travel route between Yellowstone National Park, the Bob Marshall Wilderness area, and Glacier National Park. The highway continues north into Alberta Canada, where it becomes Alberta Highway 2, and provides vehicular access from Glacier National Park to Waterton National Park, Jasper National Park, and Banff National Park.

There are four entrances to Glacier National Park accessible from US 89; however, only one (the Cut Bank entrance west of reference post 17) accesses directly from US 89 within the project corridor. The boundary of Glacier National Park is approximately 6 kilometers (4 miles) along the Cut Bank access road from that road's junction with US 89 just north of the bridge over the North Fork Cut Bank Creek. The Cut Bank entrance is the least utilized eastern entrance to the park. The Cut Bank campground, immediately west of the national park boundary, is accessible from this entrance and rarely fills to capacity during the peak visitor season (June – August). Between 1990 and 1991, this entrance received an average of 1,598 visitors in August, whereas the St. Mary's entrance (the most popular eastern entrance) received an average of 120,479 visitors in August.

Project Effects on the Section 4(f) Resources

This section describes the impacts on Section 4(f) resources resulting from each alternative of the proposed US 89 corridor project. No use of land from any Section 4(f) resource would be required under the no-build alternative.

Blackfeet Highway (Site 24GL846)

Segments of the Blackfeet Highway would be eliminated within the proposed reconstruction limits of US 89 at each location where the Blackfeet Highway crosses US 89. Specifically, seven segments of the Blackfeet Highway are located in proximity to the existing US 89 alignment (refer to maps appended to this evaluation). Four of these segments are located between Kiowa and Browning adjacent to portions of US 89 that would be widened but not realigned. Depending on final design, up to approximately 20 meters (66 feet) of area on one or both sides of the existing US 89 roadway could be disturbed during construction with the elimination of the existing Blackfeet Highway within the zone of construction.

The fifth segment crosses US 89 adjacent to the South Fork Cut Bank Creek. At this location, US 89 would be realigned slightly to the east to minimize total impacts to the creek and the slope to the northeast, and up to approximately 50 meters (164 feet) of the Blackfeet Highway would be eliminated.

The sixth segment of the Blackfeet Highway roughly parallels US 89 on the south and north slopes of Cut Bank Ridge – Red Blanket Butte crossing US 89 at three locations and varying in distance from US 89 from 0 to 400 meters (1,300 feet) or more. US 89 would be realigned substantially on the south side of Cut Bank Ridge to eliminate a severe hairpin and double curve. The realigned road would cross the Blackfeet Highway resulting in the elimination of up to approximately 50 meters (164 feet) of the Blackfeet Highway. The widened US 89 would cross this segment of the Blackfeet Highway in two other locations at approximately the same locations that the existing US 89 crosses the Blackfeet Highway resulting in the elimination of up to approximately 40 meters (130 feet) of the Blackfeet Highway at each location.

The seventh segment of the Blackfeet Highway roughly parallels the existing alignment of US 89 for about 10 kilometers (6 miles) south of Hudson Bay Divide. This segment crosses US 89 in two locations and varies in distance from US 89 between 0 and 1000 meters (3300 feet) or more. Three areas of use would occur along this segment. On the south side of Milk River Ridge, the Blackfeet Highway closely parallels US 89 and widening could eliminate the Blackfeet Highway for a distance of up to about 400 meters. The other two locations occur where the Blackfeet Highway crosses the existing US 89 at the sharp double curve south of the South Fork Milk River and at the south end of the large hairpin curve immediately south of Hudson Bay Divide. The realignments at these locations proposed to eliminate or reduce the severe roadway curves would result in the elimination of up to approximately 50 meters (164 feet) of the Blackfeet Highway at each location.

In total, of the approximately 19 kilometers (12 miles) of Blackfeet Highway that occurs in proximity to US 89 within the project corridor, up to about 800 meters of Blackfeet Highway would be eliminated by the proposed project.

Browning to Babb to Saint Mary Stage Road (Site 24GL208)

The Browning to Babb to Saint Mary Stage Road would be eliminated within proposed reconstruction limits of improvement area 3 on Duck Lake Road at each location where the Browning to Babb to Saint Mary Stage Road crosses Duck Lake Road. The historic road crossing near improvement area 2 is not within the proposed area of improvements and no impacts are expected at this location.

Old Duck Lake Road (Site 24GL209)

Old Duck Lake Road would be eliminated within proposed reconstruction limits for improvement areas 2 and 3 on Duck Lake Road and at each location where it crosses the Duck Lake Road project corridor.

Browning to Peskan Road (Site 24GL210)

The Browning to Peskan Road would be eliminated within proposed reconstruction limits of improvement area 2 on Duck Lake Road at each site where it crosses Duck Lake Road.

South Fork Cut Bank Creek/Kiowa Bridge (Site 24GL212)

Both Alternative B and the preferred Alternative C would require use of this historic site, and the historic bridge would be removed.

South Fork Milk River Bridge (Site 24GL213)

Based on preliminary investigations, both Alternative B and Alternative C would require partial use of this historic site. Both alternatives would retain the existing bridge, but would modify it to accommodate proposed roadway widening. One side of the bridge would retain the original concrete arch and would not be modified. The other side of the bridge would be widened and reconstructed to look like the original concrete arch bridge. If the structure cannot be brought to current standards through modification of the existing structure, this bridge may be removed, requiring a full use of the site.

Glacier National Park

The proposed project would not require the direct use of any publicly owned parks. During construction, tourists accessing Glacier National Park from US 89 may experience some delays during construction thereby affecting the quality of the recreational experience and user enjoyment. However, these delays would not substantially impair the function of the park.

The portion of US 89 in the vicinity of the Cut Bank entrance to Glacier National Park was reconstructed approximately 10 years ago. No improvements are proposed or required at this location under the proposed action. Therefore, access to the Cut Bank entrance would not be

directly affected by construction of the proposed action. Construction in the US 89 corridor is unlikely to affect user enjoyment of the Cut Bank campground due to the separation of that facility from construction activity. For example, noise from US 89 construction, which may reach levels of 80 to 90 decibels at a distance of 15 meters (50 feet) from the construction activity, would be attenuated to ambient levels at the campground due to the distance from construction (at least 6 kilometers [3.7 miles]) and intervening vegetation and topography. Other potential proximity impacts, such as air quality impacts from construction dust and visual impacts would similarly be minimal due to distance. Based on the above, no constructive use of Glacier National Park would occur due to the proposed project.

Avoidance Alternatives

This section identifies and evaluates location and design alternatives that would avoid the use of Section 4(f) resources.

Four Historic Road Segments (Sites 24GL846, 24GL208, 24GL209, and 24GL210)

Because the road segments cross US 89 and Duck Lake Road, any road widening or improvements would affect these segments. Large realignments that would move the roadway several hundred to several thousand meters from the existing or proposed alignment would be necessary to avoid some of the road segments altogether. Large realignments such as these would result in additional and unacceptable impacts to wetlands and streams and require substantially more topographic modifications. Effects on the historic road segments where they cross widened portions of US 89 could be avoided if the widening did not occur at those locations. This localized reduction of road width to avoid impacts would result in an unsafe condition for vehicles and bicyclists that would be similar to the unsafe conditions that now exist on US 89. Therefore, no feasible and prudent alternative exists to avoid impacts.

South Fork Cut Bank Creek/Kiowa Bridge (Site 24GL212)

Both action alternatives would remove the existing bridge and construct a longer and wider structure with a larger opening to convey streamflows. Avoidance alternatives at this location include using the existing bridge in its current condition or roadway realignment.

The feasibility of retaining the existing structure and alerting motorists to the presence of a narrow bridge was examined for both action alternatives. However, this option would result in the following consequences:

- There would be continued hydraulic constraints on the river's natural flow at the historic bridge site.
- This option would fail to meet one of the project purpose and need goals, to improve safety for bicycles and pedestrians.

-
- The bridge would not meet current standards and could not be made as strong as is now required to meet current standards.

The feasibility of retaining the existing bridge and realigning the roadway on a wider bridge to the east was also examined for both alternatives. However, the proposed realignment to the east would result in the following consequences:

- The realignment would require a second bridge crossing and the loss of riparian vegetation near an existing crossing.
- A large cut into a steep, potentially unstable slope would be made, resulting in potential adverse impacts on South Fork Cut Bank Creek from sedimentation and erosion
- More wetland area would be filled.
- More land would be converted to highway right-of-way.
- A cultural site could be disturbed.
- The realignment would result in increased disturbance in riparian areas and ongoing hydraulic constraints on the natural flow of the river at the historic bridge site.

Retaining the existing bridge and realigning the roadway to the west was not considered for the following reasons:

- A western alignment would place the roadway in the stream channel and result in extensive adverse impacts on the stream.
- A western alignment would require extensive filling of wetland area and likely would not receive the required permits under Section 404 of the Clean Water Act.
- One of the project objectives, to protect the natural environment, would not be met due to increased disturbance in riparian area and ongoing hydraulic constraints on the natural flow of the river at the historic bridge site.

South Fork Milk River Bridge (Site 24GL213)

Based on preliminary investigations, both action alternatives would retain the existing bridge in its current location and widen one side of the structure to accommodate roadway improvements. If the structure cannot be brought to current standards, this bridge may be removed. Avoidance alternatives at this location include using the existing bridge or roadway realignment.

The feasibility of retaining the existing structure and alerting motorists to the presence of a narrow bridge was examined for both action alternatives. However, this option would fail to meet the purpose of and need for the project to improve roadway safety for vehicles, bicyclists, and pedestrians.

A second avoidance alternative that was examined would retain the existing bridge and realign the roadway on a wider bridge to the east or west. This alternative was not considered for the following reasons:

- A second bridge crossing near an existing crossing would result in the loss of riparian vegetation and habitat.
- More wetland area would be filled.
- More land would be converted to highway right-of-way.
- Grizzly bear foraging habitat would be adversely affected.
- The project objective to protect the natural environment would not be met because additional riparian area would be disturbed.

Glacier National Park

While the proposed project may cause some travel delays in accessing the east side of Glacier National Park, this public park would not be directly used and no constructive use would occur. In addition, suitable detour routes to avoid construction are available. Therefore, no avoidance alternatives were considered.

Measures to Minimize Harm

This section describes the measures considered to minimize harm on the historic roads and bridges affected by the proposed action. Measures identified to minimize harm will be implemented as an element of the project design and construction.

Four Historic Road Segments (Sites 24GL846, 24GL208, 24GL209, and 24GL210)

Selection of Alternative B rather than the preliminary preferred alternative, Alternative C, while not avoiding use of the Blackfeet Highway (Site 24GL846), would reduce the extent of use of the site, but only by a very minor amount. Alternative B would result in a width of cleared area 1.2 meters (4 feet) less than Alternative C (refer to Figure 9). This reduced use of the Blackfeet Highway under Alternative B would result in a negligible reduction in impact to the historic character of the site. Given the large area covered by the Blackfeet Highway, the negligible difference in impacts between alternatives B and C results in a constructively equal net impact on this resource for these alternatives. In light of these equivalent impacts, Alternative C remains the preferred alternative due to the safety benefits from the wider roadway.

Historic roads and bridges in the project corridor are subject to the requirements outlined in the Montana Department of Transportation, Montana State Historic Preservation Office, Federal Highway Administration, and the Advisory Council on Historic Preservation programmatic agreement dated May 1989 (appended to this evaluation). Prior to construction each historic road segment to be affected by the project will be photographed and described in detail in a written summary and historic record of the site. This record will be retained at the Blackfeet Cultural Department and the Montana State Historic Preservation Office.

South Fork Cut Bank Creek/Kiowa Bridge (Site 24GL212)

The South Fork Cut Bank Creek/Kiowa Bridge would be removed under the proposed action. Measures to minimize harm at this site include retaining the structure but widening it to accommodate the proposed roadway improvements. However, the existing structure constricts the natural streamflow of the river and causes erosion during high flows. Further, the existing structure cannot be made as strong as is now required to meet current standards. Replacing the bridge will improve hydrology in this important fish-bearing system and will also include provisions for dry land passage for large mammals underneath the bridge during most of the year.

To minimize harm to the bridge, removal and reuse was also considered. However, because of the nature of the materials used in its construction, this structure cannot be removed intact to be reused at another site. As a result, prior to its removal, the existing bridge will be photographed, measured, and described in detail in a written summary and historic record of the site. This record will be retained at the Blackfeet Cultural Department and the Montana State Historic Preservation Office.

South Fork Milk River Bridge (Site 24GL213)

Recognizing the need to remove the historic bridge at South Fork Cut Bank Creek, the South Fork Milk River Bridge would be preserved to the extent feasible. The bridge would be retained on the site, although the widened alignment would require modifications to the bridge. However, if the structure cannot be brought to current standards, this bridge may be removed. If the bridge is preserved, one side of the bridge would retain the original concrete arch. The other side of the bridge would be widened and reconstructed to look like the original concrete arch bridge. Prior to the proposed modifications, the existing bridge would be photographed, measured, and described in detail in a written summary and historic record of the site. This record would be retained at the Blackfeet Cultural Department and the Montana State Historic Preservation Office.

Glacier National Park

Tourists accessing the east entrance of Glacier National Park could travel Duck Lake Road to avoid construction delays on US 89. Because improvements are also planned for Duck Lake

Road, these projects could not occur during the same period. In addition, the traveling public would be provided sufficient warning of potential traffic delays and alternative travel routes.

Coordination

In addition to compliance with Section 4(f), the Montana Department of Transportation must comply with the requirements of the Historic Preservation Act, Section 106. On October 29, 2002, the Montana Department of Transportation provided its determination of effect for the US 89 project to the Montana State Historic Preservation Office (appended to this evaluation). On October 31, 2002, the Montana State Historic Preservation Office provided its letter of concurrence to the Montana Department of Transportation (see appended to this evaluation).

On August 14, 2001, and other dates, the Montana Department of Transportation also consulted with the Blackfeet Cultural Program to identify mitigation measures for impacts on cultural resources that meet the definition of Section 4(f) resources. Most of these resources were subsequently avoided by realigning the roadway. Several Blackfeet cultural sites consisting of cloth-offering sites that lie within the project corridor would be directly affected by the proposed project. These cloth-offering sites located within the construction limits will be moved prior to construction in accordance with Resolution Number 53-2002 as approved by the Blackfeet Tribal Business Council on January 17, 2002.

Section 4(f) Documentation

**Montana Department of Transportation**2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001David A. Galt, Director
Judy Martz, Governor

October 29, 2002

Mark Baumler
State Historic Preservation Office
Montana Historical Society
1410 East 8th Avenue
P.O. Box 201202
Helena, MT 59620

Subject: **BROWNING - HUDSON BAY DIVIDE**
STPP 58-1(19) 0
CONTROL NUMBER 4045

Dear Mark,

This letter and its attachments constitute Montana Department of Transportation's (MDT) determination of effect (DOE) for the above federal aid highway project. A Draft Environmental Impact Statement is (DEIS) under preparation for this project at the present time. This determination of effect is based on MDT's preferred alignment. Two alternatives have been considered, a 32 foot wide road and a 36 foot wide road. This DOE assumes that the 36 foot wide alternative is used, thus we are examining impacts to cultural resources based on the widest road footprint that is under consideration. If ultimately a 32 foot wide road is constructed then the impacts will be reduced. As yet no projects have been programmed to construct any of the highway segments that are being examined under the auspices of the DEIS.

Steve Aaberg conducted the cultural resource inventory report for this project (Aaberg, Kipp, Walker-Kuntz and Crofut 2001). The report is dated 3/01. MDT consulted with Montana SHPO regarding this report on 7/10/01 and SHPO subsequently replied on 7/17/01. Aaberg identified 58 cultural loci along the project corridor. Property types include stone circle sites, lithic scatters, cairn sites, buried campsites, historic roads and bridges and a large number of contemporary Blackfeet cloth offering locations.

On 8/14/01 MDT met with Skillings-Connolly and the Blackfeet Tribe in Browning to discuss the cultural sites identified along the project corridor and determine the Tribe's priorities for site avoidance. Joyce Spoonhunter provided input from the Blackfeet Cultural Program and Ramona Hall represented the Bureau of Indian Affairs at the meeting. At that meeting it was decided that several sites which local informants stated might contain human burials were the most important priority to avoid.

In December 2001, Joyce Spoonhunter conducted elder interviews and site visits along the Browning - Hudson Bay Divide project corridor. The elders recommended that the Blackfeet Cultural Program move several tipi rings and a couple of cairns that appeared to be in conflict with the road. With regard to the cloth offering locations, the Blackfeet Cultural Program agreed to "find a qualified person" to move any offerings that have not deteriorated away prior to construction of the highway reconstruction project. On 1/17/02 the Blackfeet Tribal Business Council passed a resolution approving the Blackfeet Cultural Program's report and recommendations. Attachment #2 is the Blackfeet Cultural Program report and Council Resolution.

As of a few weeks ago the plans for this project called for impacts to 24GL942, a significant stone circle site located at stations 82 through 84 on the north side of U.S. Highway 89. Since that time MDT's consultant, Skillings Connolly, has redesigned the road adjacent to 24GL942 in such a way that the preferred alignment will avoid the site and have no effect upon it. See Attachment #1.

Other eligible or unresolved sites that will be avoided include 24GL943 and 24GL944, both cairn sites, the Eagle Child Family Burial Area (See Attachment #3), and 24GL948, which consists of cairns and a grave (See Attachment #4).

Also to be avoided are, 24GL951, which consists of cairns and possibly burials (See Attachment #5), and 24GL952, a buried campsite located on the south bank of the South Fork of the Milk River (See Attachment #6).

The cloth offering sites were noted on the plans but not given Smithsonian numbers. Thirty two cloth offering loci were identified along the US 89 project corridor. Of these, twelve cloth offering loci will be impacted by construction of MDT's preferred alignment. The Blackfeet Cultural Program has agreed to move the offerings that fall in the path of the new road.

The four historic road segments and two historic bridges all fall under MDT's PMQA on Historic Roads and Bridges. The bridges are concrete structures with beautiful stone facades. One of these bridges, 24GL213, is located over the South Fork of the Milk River. It is in good shape and will be rehabilitated and maintained in place as part of the reconstruction of this portion of US 89. The other bridge, 24GL212, is located over the South Fork of Cut Bank Creek. The Cut Bank Creek Bridge is in poor condition and has been slated for replacement. See Attachment #7.

Also included in the DEIS under preparation is an option to upgrade the Duck Lake Road. The plan is to reconstruct Duck Lake Road to a 32 foot top width and flatten slopes alongside the road to meet federal safety standards. Although Aaberg surveyed the entire length of the Duck Lake Road alternative, MDT plans to reconstruct only the western 10 miles of the road. There is one archaeological site, 24GL956, located along this stretch of Duck Lake road. The site is a buried lithic scatter located on the north side of the road along an un-named tributary of the St. Mary's River. It has not been formally

evaluated. MDT plans to avoid the site by realigning the road south of its present location.

Browning-Hudson Bay Divide is a NEPA project addressing anticipated impacts to reconstruction of Highway 89 and 10 miles of Duck Lake Road on the Blackfeet Indian Reservation. As yet no monies have been appropriated to build any of the road segments under examination in the DEIS. It may be several years before MDT programs the dollars to construct what is currently being examined under the NEPA process, and several more years of project development work before any road segments will be ready to go to contract. We will make every effort to see that the final design is consistent with the design upon which this determination of effect is based. However, since final plans may not be available for parts of the road for many years it is possible that this effect determination will need to be updated at some unknown point in the future.

If you have questions about this matter please contact me at 406-444-0455 or splatt@state.mt.us.



Steve Platt, Archaeologist
Environmental Services

Cc:	Gordon Stockstad, Resources & Permitting	
	Joyce Spoonhunter, Blackfeet Cultural Program	w/attach.
	Ramona Hall, BIA, Blackfeet Indian Reservation	w/attach.
	Marvin Keller, BIA, Billings Area Office	w/attach.
	Karl Helvik, P.E., Consultant Design	w/attach.
	File	w/attach.

References:

Aaberg, Stephen A., George Kipp III, Patrick Walker-Kuntz, and Chris Crofut
2001 *U.S. 89 Browning-Hudson Bay Divide and Duck Lake Road
Archaeological and Cultural Investigations, Blackfeet Reservation,
Glacier County, Montana Volumes I and II*, report prepared for
Skillings-Connolly, Inc. Lacey, Washington.



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MASTER FILE
COPY

Thursday, October 31, 2002

Steve Platt
MT DOT
POB 201001
Helena 59620-1001

RE: Browning Hudson Bay Divide
STPP 58-1(19) 0
Control 4045

Steve:

Thank you for requesting our comment regarding impacts to cultural resources associated with the above referenced federal aid highway project. We have reviewed the submitted reports: Aaberg 2002 and Blackfeet Culture Department 2001.

Based on that review and the supporting resolution from the Blackfeet Tribal Business Council we agree that significant impacts to a) Historic Properties, b) resources with unresolved National Register Eligibility or c) places of on going cultural practice are not expected as long as the preliminary plan sheets and special provisions for protection for the preferred alternative (dated 07/18/2002 and 10/02/2002) are followed. We did not see a special provision on the preliminary plans specifying culturally appropriate removal of the contemporary prayer offerings as found in the Blackfeet Culture Department report and BTBC resolution 53-2002, and believe it would be appropriate to make a clear stipulation for following those findings in the ROD. We also believe the potential for significant impacts to cultural resources and Historic Properties would require supplemental assessment should the preferred alignment change. If avoidance of Eligible or unresolved properties cannot be accomplished as final designs are proposed further consultant under 36 CFR 800 would also be warranted.

We would like to express our appreciation to MT DoT, and Skillings Connolly, their consultant, for the sincere and effective efforts to redesign this project to avoid significant cultural resources.

Stan Wilmoth, Ph.D.
State Archaeologist/Deputy, SHPO

Appendix 1: The 1989 Historic Roads and Bridges Programmatic Agreement.

PROGRAMMATIC AGREEMENT

Among the Federal Highway Administration (FHWA), the Montana State Historic Preservation Office (MSHPO), and the Advisory Council on Historic Preservation (ACHP), to develop a historic preservation plan to establish processes for integrating the preservation and use of historic roads and bridges with the mission and programs of the FHWA in a manner appropriate to the nature of the historic properties involved, the nature of the roads and bridges in Montana, and the nature of the FHWA's mission to provide safe, durable and economical transportation.

WHEREAS, Congress has mandated that highway bridges be evaluated, and where found substandard, be rehabilitated or replaced and has provided funding for these purposes, to insure the safety of the traveling public (through the Highway Bridge Replacement and Rehabilitation Program); and

WHEREAS, the American Association of State Highway and Transportation Officials (AASHTO) has standards regulating the construction and the rehabilitation of highways and bridges that must be met by the FHWA to insure the safety of the traveling public; and

WHEREAS, Congress declares it to be in the national interest to encourage the rehabilitation, reuse and preservation of bridges significant in American history, architecture, engineering and culture; and

WHEREAS, the FHWA proposes to make Federal funding available to the Montana Department of Highways (MDOH) for its ongoing program to construct and rehabilitate roads and bridges, and MDOH concurs in and accepts responsibilities for compliance with this Agreement; and

WHEREAS, the FHWA has determined that the construction and improvement of

highways may have an effect on historic roads and bridges that are listed in the National Register of Historic Places, or may be determined eligible for listing, and have consulted with the ACHP and the MSHPO pursuant to Section 800.13 of the regulations (36CFR800) implementing Section 106 of the National Historic Preservation Act (16U.S.C. 470f); and

WHEREAS, the parties understand that not all historic roads and bridges fall under the jurisdiction of sphere of influence of the FHWA, and that to encourage other parties to participate in preservation efforts, an education to foster a preservation ethic is needed; and

NOW THEREFORE, FHWA, MSHPO, and ACHP agree, and MDOH concurs, that the following program to enhance the preservation potential of historic roads and bridges, and to promote management and public understanding of and appreciation for these cultural resources will be enacted in lieu of regular Section 106 procedures as applied to historic roads and bridges only.

Stipulations

The Federal Highway Administration will ensure that the following program is carried out:

The Federal Highway Administration, in cooperation with the Montana Department of Highways, will develop a preservation plan to ensure the preservation and rehabilitation of the states [sic] significant historic roads and bridges, and will develop and on-going educational program to interpret significant historic roads and bridges that illustrate the engineering, economic, and political development of roads in Montana. Specifically:

A. For Public Education

1. MDOH will prepare technical documentation of the history of roads and road construction, and of the history of bridge building in the state, according to a format developed by MDOH in consultation with the MSHPO and in compliance with the Secretary of the Interior's Standards for Preservation Planning. From this documentation, MDOH will prepare narrative histories suitable for publication for the general public. Draft copies of the documentation and the narrative histories will be submitted to the FHWA, MSHPO and a list of qualified reviewers to be determined by FHWA, MDOH and MSHPO by December 1, 1990, and 45 days will be allowed for reviewers to comment. MDOH will prepare final documentation and histories by May 1, 1991. Final copies will be distributed to the district, area, and field offices of the MDOH, to the County Commissioners, county road and bridge departments, and county historical societies, to the owners of significant roads and bridges identified in the documentation, to the Montana Historical Society Library and the Montana State Library, and to the general public as requested.
2. MDOH will develop and make available to newspapers and publishers of historical and of engineering journals articles suitable for public information on historic roads and bridges and on their construction and significance.

3. MDOH will augment its historic sign program by developing interpretation for the traveling public at existing rest areas or pull-overs to explain Montana's road construction and bridge engineering. It will develop on-site interpretation for significant resources that can be viewed and appreciated by the public.
4. By April 15, 1990 MDOH will develop and circulate a traveling exhibit that portrays the history of the development of transportation in Montana.
5. By December 1, 1991 MDOH will develop and circulate a public program (slide/tape or video) of approximately 20 minutes, suitable for use at public or organization gatherings, classrooms, etc.

B. For Historic Road and Bridge Preservation

1. The FHWA, in co-operation with the MDOH, will prepare a plan for the preservation of significant and representative road segments and bridge types around the state as identified in the research in Part A. of this Agreement. The Historic Preservation Plan (HPP) will be presented to the FHWA, MSHPO, the ACHP and [a] list of qualified reviewers by September 1, 1991, and 45 days comment period will be allowed for discussion and adoption. FHWA will work to resolve disagreement on the proposed HPP. If agreement cannot be reached by December 1, 1991, all FHWA undertakings affecting historic roads and bridges will again become subject to 36 CFR 800 procedures.

The HPP for historic roads and bridges shall be prepared in accordance with the following guidelines:

- a. The essential purpose of the HPP will be to establish processes for integrating the preservation and use of historic roads and bridges with the mission and programs of the FHWA and the MDOH in a manner appropriate to the nature of the historic properties involved, the nature of the roads and bridges in Montana, and the nature of FHWA's mission, to provide safe, durable and economical transportation;
- b. In order to facilitate such integration, the HPP, including all maps and graphics, will be made consistent with the Federal Aid road and bridge numbering systems;
- c. The HPP will be prepared in consultation with the owners, managers, caretakers, or administrators of historic roads and bridges, including county governments, city governments, federal agencies, and private individuals or corporations, and with interested parties or organizations, including the American Society of Civil Engineers - Montana Section, and the Montana Society of Engineers;
- d. The HPP will be prepared with reference to the Secretary of Interior's Standards and Guidelines for Preservation Planning (48

FR 44716-20); and

- e. The HPP will be prepared by or under the supervision of an individual who meets, or individuals who meet, at a minimum, the "professional qualifications standards" for historian and archaeologist in the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-9).
2. The contents of the HPP will be developed in conjunction with the MSHPO, and will include, but not be limited to, a schedule for the anticipated implementation of the various elements, plus the formulation and presentation of programs to:
- a. Preserve historic bridges that do not meeting safety rating standards by rehabilitation in a manner that would preserve important historic features while meeting as many AASHTO standards as can be reasonable met;
 - b. When a historic bridge must be replaced, give full consideration and demolition savings to reuse of the historic bridge in place by another party.
 - c. When a historic bridge must be replaced and in place preservation is not feasible, give full consideration and financial assistance to relocating and rehabilitating the historic bridge as a part of the replacement project;
 - d. Develop and implement a program to encourage relocation and reuse of bridges of historic age that cannot be preserved in place or used on another location by the state or county;
 - e. Provide a financial incentive by offering demolition savings on all relocation and reuse of bridges of historic age;
 - f. Develop a list of historic roads and bridges that can be preserved. The list should include the variety available to reflect Montana highway construction history, while considering current condition and use. The list should be presented to and discussed with managing units to solicit their cooperation and/or participation in the preparation of the HPP; and
 - g. Devise a program to pursue the preservation of the state's representative and outstanding examples of road and bridge technology. A list of historic roads and bridges shall be preserved will be developed to implement this program, given currently known commitments to do so by property managers and subject to change by obtaining future commitments for other properties covered by this Agreement.
3. The HPP will not include information developed in Part A. above, narrative histories, but will be guided by and used in conjunction with Part A. above,

and will be distributed to the same parties.

4. MDOH will prepare a report annually on its implementation of the HPP, and provide this report to the FHWA, the SHPO, and the ACHP for review, comment, and consultation as needed.

C. Other Legal and Administrative Concerns

1. FHWA will continue to inventory, evaluate and seek determinations of eligibility, and fully comply with 36 CFR 800 for all undertakings with the potential to affect historic properties besides roads and bridges which are hereby excluded from such consideration.
2. The MSHPO, and the ACHP may monitor FHWA and MDOH activities to carry out this PA, by notifying FHWA in writing of their concerns and requesting such information as necessary to permit either or both MSHPO and ACHP to monitor the compliance with the terms of this Agreement. FHWA will cooperate with the SHPO, and the ACHP in carrying out their monitoring and review responsibilities.
3. FHWA will carry out the existing MOA's to preserve or record historic bridges that are now scheduled for replacement.
4. If a dispute arises regarding implementation of this PA, FHWA will consult with the objecting party to resolve the dispute. If any consulting party determines that the dispute cannot be resolved, FHWA will request further comments of the ACHP.
5. During any resolution of disagreements on the PA, and/or in the event MDOH does not carry out the terms of the PA, FHWA will carry out the procedures outlined in 36 CFR 800 for all undertakings otherwise covered by this agreement.

Execution of this PA evidences that FHWA has afforded the ACHP a reasonable opportunity to comment on FHWA's program to construct and improve Montana highways when those undertakings affect historic roads and bridges, and that FHWA has taken into account the effects of these undertakings on significant historic roads and bridges.

BY: FEDERAL HIGHWAY ADMINISTRATION

<u>[Roger K. Scott]</u>	<u>[May 11, 1989]</u>
Roger K. Scott	Date
Division Administrator	

BY: MONTANA STATE HISTORIC PRESERVATION OFFICER

<u>[Marcella Sherfy]</u>	<u>[May 11, 1989]</u>
Marcella Sherfy, MSHPO	Date

BY: ADVISORY COUNCIL ON HISTORIC PRESERVATION

[Robert D. Bush] [June 1, 1989]
Executive Director Date

CONCUR

BY: MONTANA DEPARTMENT OF HIGHWAYS

[Stephen C. Kologi] [May 11, 1989]
Stephen C. Kologi, P.E., Chief Date
Preconstruction Bureau

**Amendment To The Programmatic Agreement Regarding
Historic Roads and Bridges In Montana**

We are hereby amending the following stipulations in the Programmatic Agreement.

A. For Public Education

1. In the third sentence December 1, 1990 becomes December 1, 1992. In the fourth sentence, May 1, 1991 becomes May 1, 1993.
5. December 1, 1991 becomes December 1, 1993.

B. For Historic Road and Bridge Preservation

1. September 1, 1991 becomes September 1, 1993 and December 1, 1991 becomes December 1, 1993.

By: Federal Highway Administration

[D. C. Lewis for] Date [February 27, 1992]
Hank Honeywell
Division Administrator

By: Montana State Historic Preservation Officer

[Marcella Sherfy] Date [February 27, 1992]
Marcella Sherfy, MSHPO

By: Advisory Council on Historic Preservation

[Robert D. Bush] Date [March 16, 1992]
Robert D. Bush, Executive Director

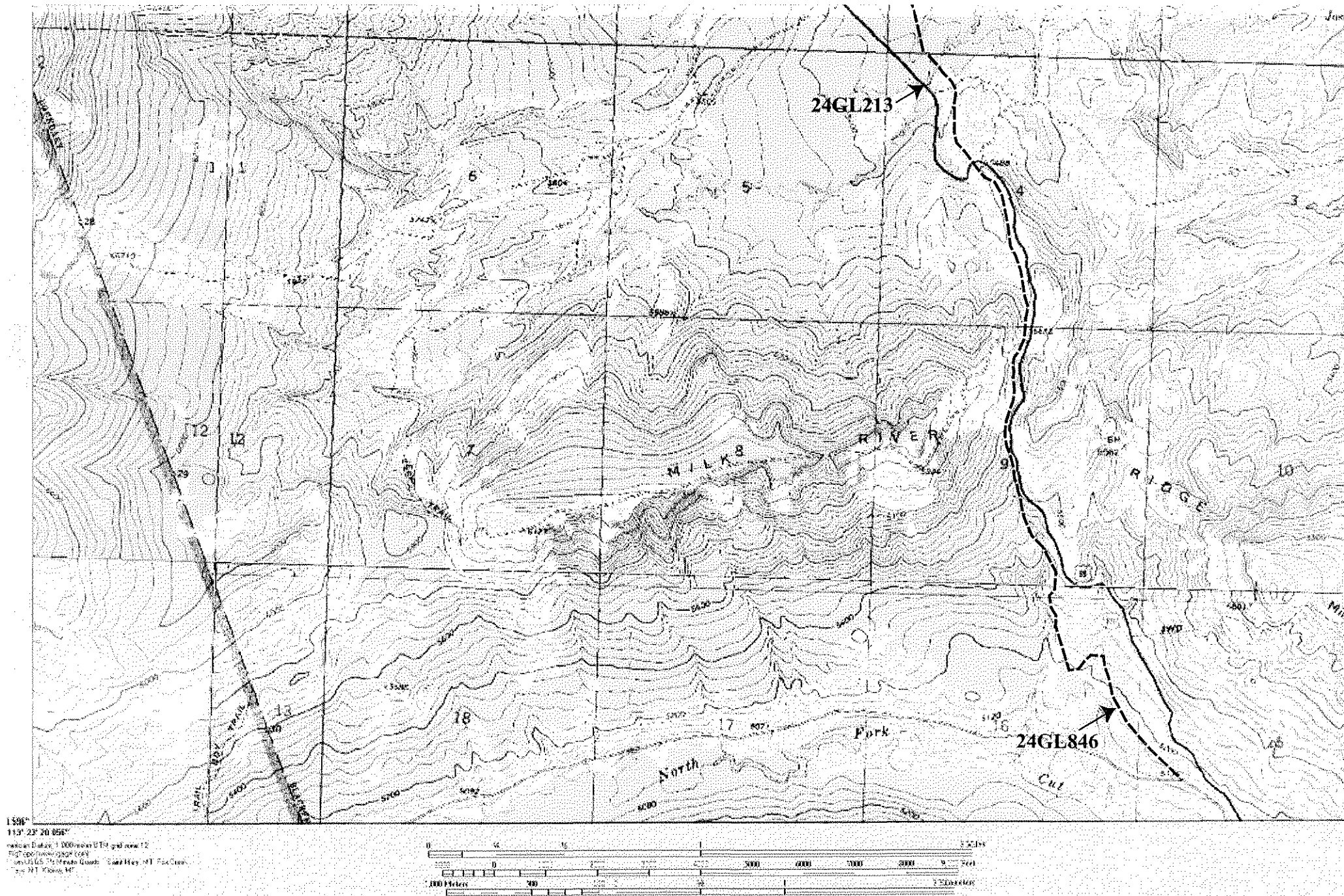
Concur

By: Montana Department of Transportation

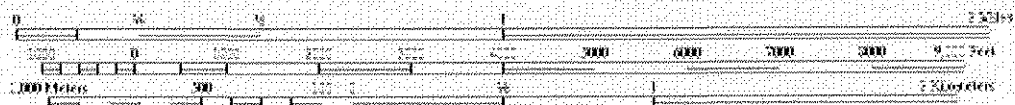
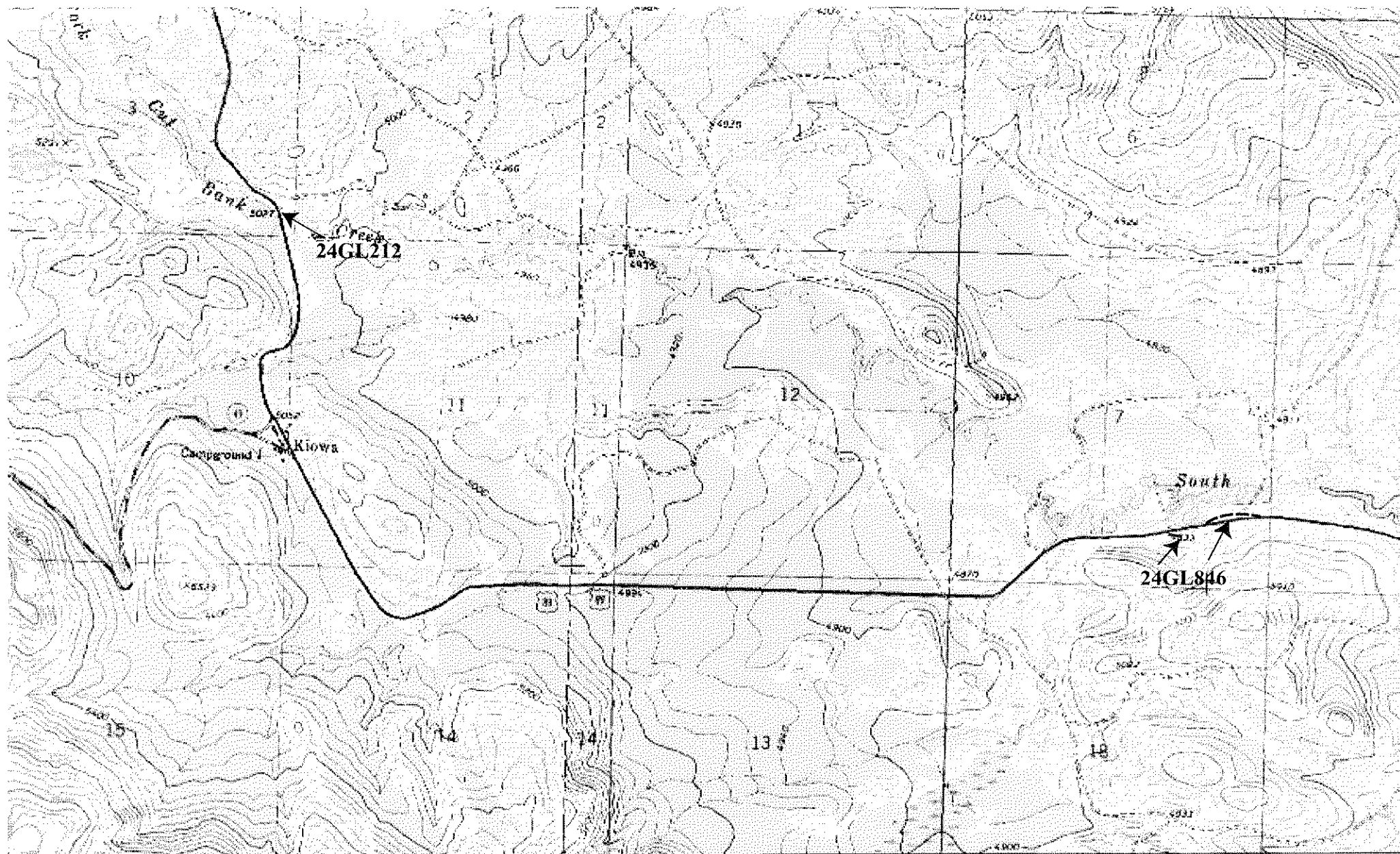
[Edrie Vinson] Date [February 25, 1992]
Edrie Vinson
Environmental & Hazardous Waste Bureau

Maps Showing Locations of Historic Road Segments and Bridges Within Project Corridor

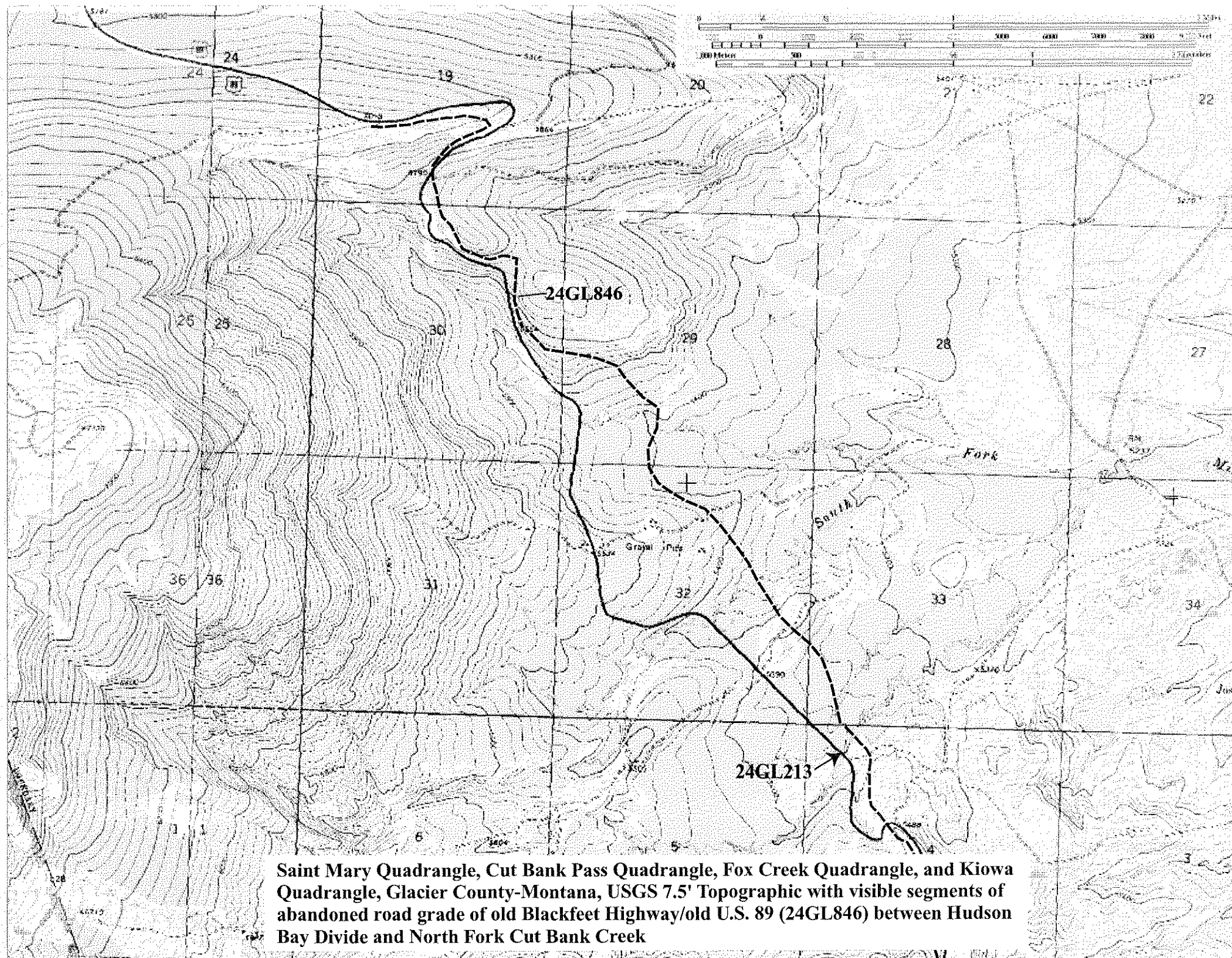
From Aaberg, Stephen A, George Kipp III,
Patrick Walker-Kuntz, and Chris Crofutt. 2001.
U.S. 89 Browning-Hudson Bay Divide and Duck Lake Road
Archaeological and Cultural Investigations,
Blackfeet Reservation, Glacier County, Montana.
Volume II, Site Updates, Site Forms, Isolate Forms,
and Culture Area Forms. Final Draft.
Prepared for Skillings-Connolly, Inc., Lacey, Washington.
March 2001.

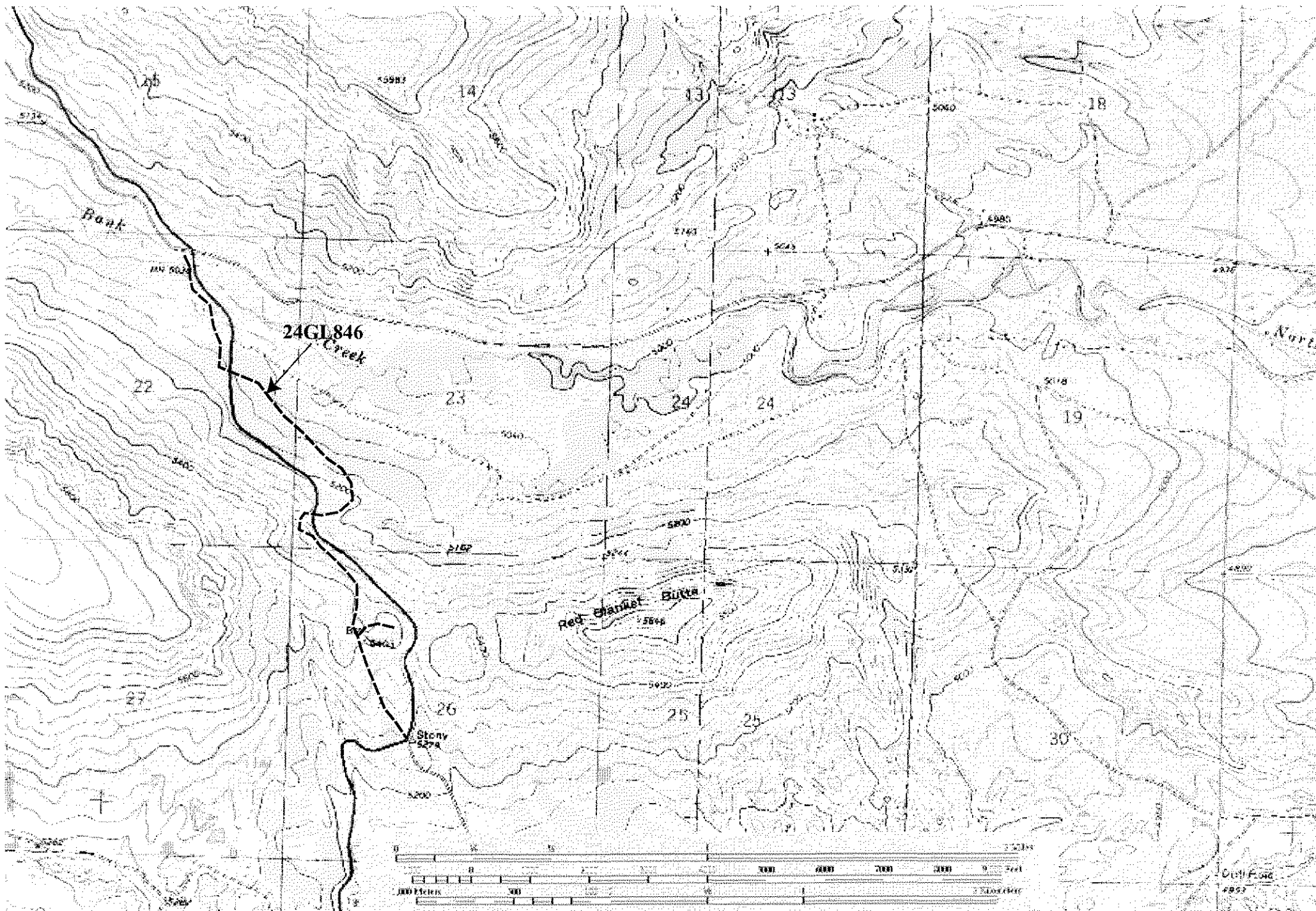


Saint Mary Quadrangle, Cut Bank Pass Quadrangle, Fox Creek Quadrangle, and Kiowa Quadrangle, Glacier County-Montana, USGS 7.5' Topographic with visible segments of abandoned road grade of old Blackfoot Highway/old U.S. 89 (24GL846) between Hudson Bay Divide and North Fork Cut Bank Creek

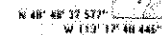


**Kiowa Quadrangle and Starr School Quadrangle, Glacier County-Montana, USGS 7.5'
Topographic with visible segments of abandoned grade of the old Blackfoot Highway/old
U.S. 89 grade (24GL846) between North Fork Cutbank Creek and three miles east of Kiowa**

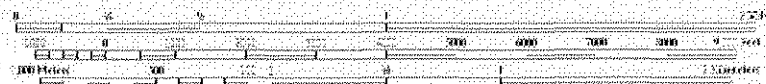


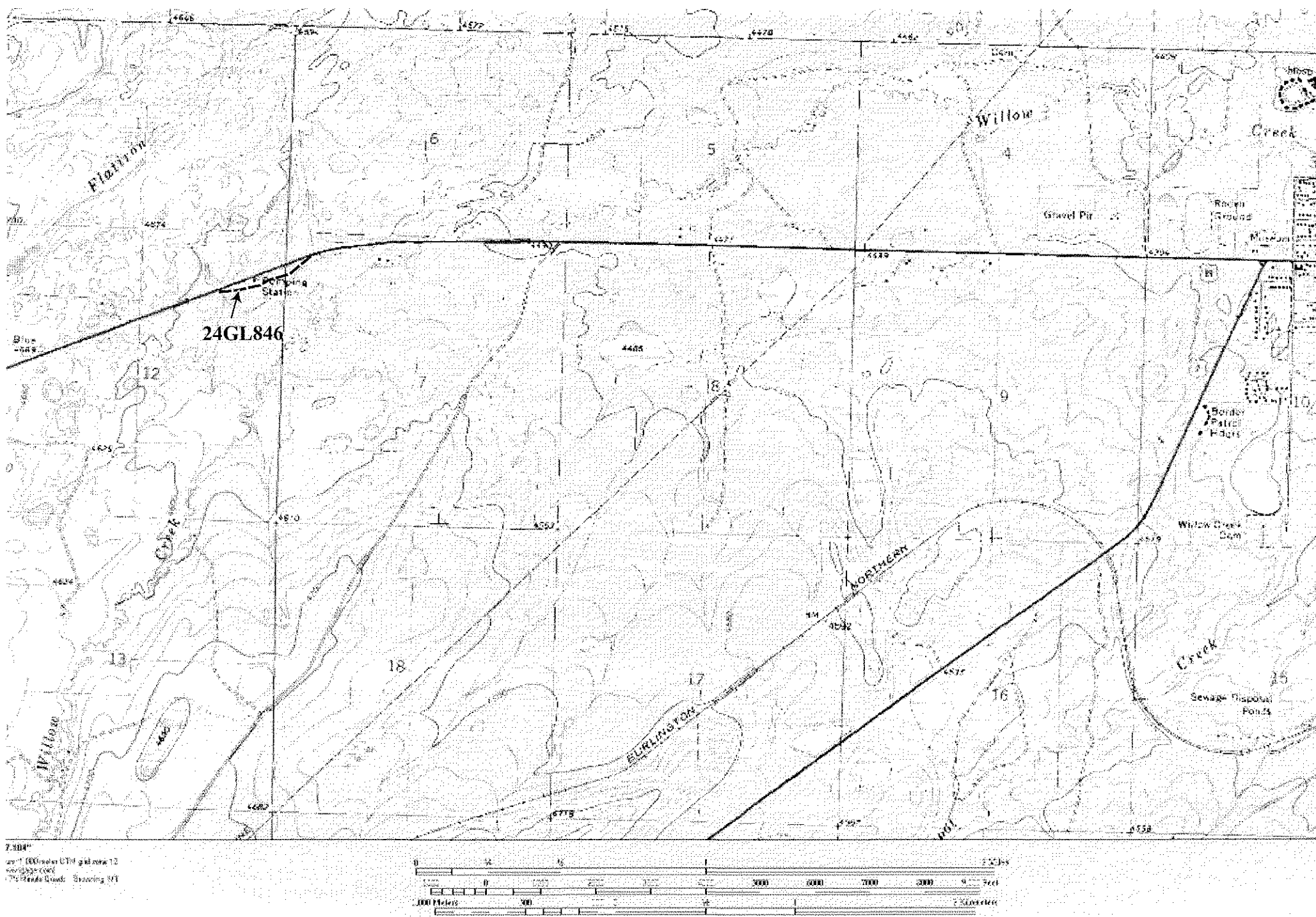


Kiowa Quadrangle and Starr School Quadrangle, Glacier County-Montana, USGS 7.5'
Topographic with visible segments of abandoned grade of the old Blackfoot Highway/old
U.S. 89 grade (24GL846) between North Fork Cutbank Creek and three miles east of Kiowa



1957 North American edition: 1 (365 pages) (T.H. and issue #2
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 1960 (reprinted by B&H) (www.bh.com) (reprinted by B&H) (www.bh.com)
 1970 (reprinted by B&H) (www.bh.com) (reprinted by B&H) (www.bh.com)





Browning Quadrangle, Glacier County-Montana, USGS 7.5' Topographic with segment of abandoned grade of old Blackfoot Highway/old U.S. 89 (24GL846)

APPENDIX E

Section 404 (b)(1) Evaluation

404(b)(1) EVALUATION

US 89 Browning to Hudson Bay Divide

Montana Department of Transportation
Project Number STPP 58-1(19)0~CN 4045

Prepared for
Montana Department of Transportation

Prepared by
Skillings-Connolly, Inc.

Draft
October 7, 2003

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Section 1: Introduction

The 404(b)(1) Guidelines, found in Title 40 of the Code of Federal Regulations, Part 230, are the substantive criteria used in evaluating discharges of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act and are applicable to all 404 permit decisions. Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystems unless it can be demonstrated that such discharges would not have unacceptable adverse impacts either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.

Subpart B of the guidelines establishes four conditions, which must be satisfied to make a finding that a proposed discharge complies with the guidelines. Paragraph 230.10 provides that:

- a) Except as provided under Section 404(b)2, no discharge of dredged material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.
- b) No discharge of dredged or fill material shall be permitted if it violates state water quality standards, Section 307 of the Clean Water Act, or the Endangered Species Act of 1973.
- c) No discharge of dredge or fill material shall be permitted which would cause or contribute to significant degradation of the waters of the United States.
- d) Except as provided under Section 404(b)2, no discharge shall be permitted unless appropriate and practicable steps have been taken which will minimize adverse impacts of the discharge on the aquatic ecosystem.

Mitigation to offset significant and insignificant adverse impacts may be developed which could result in bringing a project into compliance with the guidelines. Impacts must be avoided to the maximum extent practicable and remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts and finally, by compensation for loss of aquatic resource values.

Section 230.11 sets forth the factual determinations which are to be considered in determining whether a discharge satisfies the four conditions of compliance. These determinations are contained in the following evaluation.

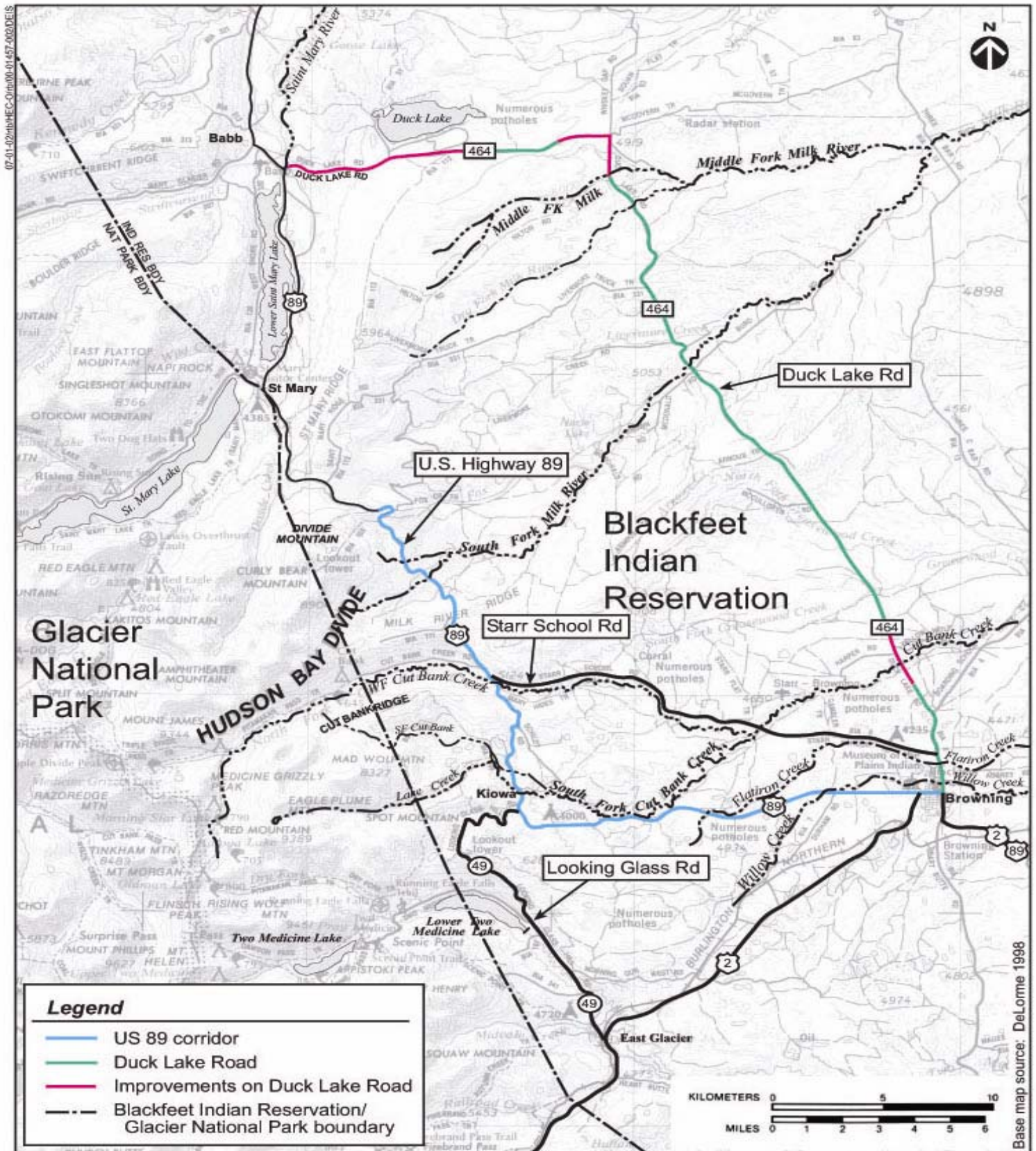
Section 2: Project Description

A: LOCATION

US 89 is a minor arterial that provides one of the primary north-south routes connecting Alberta, Canada and central Montana. The project termini are US 89 at its junction with US Highway 2 (US 2) in Browning and US 89 approximately 8.7 km (5.4 miles) south of St. Mary at the height of land at Hudson Bay Divide. The highway runs primarily parallel to the eastern boundary of Glacier National Park from Hudson Bay Divide to Kiowa Junction and then easterly to the edge of Browning. Figure 1 in this report shows the project location. Broad rolling hills and grasslands dominate the project corridor in the lower elevations with mountainous terrain in the higher elevations.



Figure 1. Vicinity map of the US 89 corridor improvement project, Montana.



B: GENERAL DESCRIPTION

A Draft Environmental Impact Statement (EIS) is being prepared concurrently with this evaluation. The Draft EIS is being prepared to examine various alternatives for improving transportation in the project corridor and to identify the associated environmental impacts. The document is currently in preliminary draft form. The Draft EIS, including a draft of this 404(b)(1) Evaluation will be submitted to regulatory agencies for review and comment.

The Draft EIS evaluates the following alternatives:

Alternative A- No Action

Alternative B- Improve US 89 to 32-foot width

Alternative C- Improve US 89 to 36-foot width

Option- Spot improvements to Duck Lake Road, Alternate truck route

The proposed alignment for either of the “build” alternatives would generally follow the existing US Highway 89 alignment with a few exceptions. In a few locations the alignment will be shifted in order to improve roadway geometry and to bring the alignment up to current MDT standards. The proposed highway alignment has been shifted away from the existing alignment in five (5) locations in order to avoid or minimize impacts to wetlands and surface waters. The alignment was also shifted to avoid impacts to culturally sensitive sites. Table 1 details the proposed realignment. In all areas where detailed wetland or aquatic impacts are determined during time of design, the embankment fill slopes will be made steeper than the standard recommended slope to minimize impacts.

Table 1: Aquatic Resource Avoidance / minimization Realignments / other measures

Wetland	Milepost Location	Problem Statement	Proposed Realignment	Associated Water Body	Wetland Impact Avoided (≈)
W8	14	Proposed alignment crossing is located at a bend in the riparian system, increasing the amount of acreage effected.	Realign the highway to the north approximately 26 meters (80 feet).	Isolated	0.1 hectares/ 0.3 acres
W18	12	Existing alignment contains a sharp curve.	Shift alignment to the north and use a bridged crossing rather than culverts.	Lake Creek	0.7 hectares/ 1.7 acres
W21	11	Roadway confined by moderate slope to the north and riparian system to the south.	Widen along the north side of the roadway and avoid stream channel impacts.	Tributary to South Fork Cut Bank Creek	0.2 hectares/ 0.5 acres
W28	8	Roadway confined by wetland to the north and irrigation ditch to the south.	Widen or shift roadway to the south 30 meters (100 feet).	Flatiron Creek	0.3 hectares/ 0.7 acres
W45 and W46	3	Willow Creek closely parallels the roadway.	Shift construction to the north side of the roadway and modify construction limits to avoid stream channel.	Willow Creek	0.1 hectares/ 0.2 acres
All Category I wetlands		Road designers typically prefer to scale the road fill embankment at a 6:1 slope to eliminate steep embankments and minimize the need for guardrail.	Modify the recommended fill slope beyond clear zones from a 6:1 slope to a steeper slope as long as guardrail would not be required.		0.8 hectares (2.0 acres)

C: AUTHORITY AND PURPOSE

The Montana Department of Transportation (MDT) proposes the improvement of a 41-km (25.5 mi) segment of US 89. As a result of identified roadway deficiencies, MDT sought and received funding from the Federal Highway Administration (FHWA) to analyze the environmental impacts of improving the segment of US 89 between Browning and Hudson Bay Divide.

Several deficiencies of the existing transportation system in this corridor have been identified. The following is a brief summary of the purpose and need for improvement:

- US 89 is a minor arterial that provides one of the primary north-south routes connecting Alberta, Canada and central Montana.
- The existing two-lane roadway, particularly the section of US 89 from Kiowa to Hudson Bay Divide, has few pull-outs and is narrow with sharp curves, providing few opportunities for passing slow-moving vehicles or bicyclists.
- Due to roadway characteristics and the variety of vehicles using the roadway, vehicles cannot travel at the designated speed limits.
- Average daily traffic volumes are projected to increase substantially over the next 25 years, exacerbating the effects of the roadway configuration on traffic flow.
- Sharp curves, narrow shoulders, and numerous roadside obstacles such as steep cut and fill slopes reduce the overall safety of the roadway.
- None of the existing US 89 roadway between Browning and the Hudson Bay Divide meets all current state and federal roadway design requirements.
- The roadway is not safe for bicycle, pedestrian, and equestrian use because of the lack of sufficient roadway shoulders and pull-off areas.
- The accident rate on US 89 from 1994-1999 is 1.81 accidents per million vehicle miles of travel, compared with a Montana state average accident rate of 1.55 for similar roads.
- Pavement overlays are no longer a viable option for roadway maintenance because the paved surface, which becomes narrower with each successive overlay, is already not meeting MDT standards.

Review of the environmental impacts for proposed spot improvements to Duck Lake Road is also included in the Biological Resource Report. Duck Lake Road extends north from Browning to Babb within the project area. Duck Lake Road provides an alternative to US 89 south of Babb for traffic traveling between the Canadian border and the city of Browning. This alternate route is available year-round, and preferred by commercial vehicles because of its flatter and straighter alignment. Improvements to Duck Lake Road are expected to lead to its increased use as an alternate route, reducing truck traffic on US 89 between Browning and Hudson Bay Divide. The option of spot improvements to Duck Lake Road can be included with either of the build alternatives. If the No Action alternative (Alternative A) is preferred, then the Option will be reviewed

under a separate environmental review. Width, alignment, and other features associated with US 89 are independent of alternative decisions for the Duck Lake Road Option.

D: GENERAL DESCRIPTION OF THE DREDGED OR FILL MATERIAL

1) General Characteristics of Material

Fill material will be excavated locally and will be similar in physical and chemical characteristics to substrate in wetlands that are filled. Material used in wetland fills is likely to be some sort of AASHTO-approved fill material with no organics, more granular soils, etc. Also, some sub-excavation may be needed for construction of the road base. While excavation and borrow sites have not been identified at this time, the site will be chosen in part on certain characteristics. Borrow or excavation sites will not be allowed if they have high levels of salinity, acid-generating materials, heavy metals, pesticides or other elements or substances potentially harmful to fish, wildlife, or other aquatic organisms. General fill material may be suitable soils, including earth and crushed or naturally occurring sands and gravels. Some fill material may be concrete, steel, or similar materials that could be used for culvert or bridge construction. Rock riprap may be used to resist erosion around flowing water or where wave action is likely to occur.

2) Quantity of Material

Quantities of fill material will depend upon the build alternative that is selected and specific topographical features of affected wetlands. Quantities of fill material to be placed will be determined during the final design phase of the project. Quantities will be sufficient to construct the roadway and appurtenant features.

3) Source of Material

The locations of the borrow pits that will be used as fill material for the proposed project have not yet been finalized. The source of fill material to be placed will be determined during the final design phase of the project. Borrow or excavation sites will not be allowed if they have high levels of salinity, acid-generating materials, heavy metals, pesticides or other elements or substances potentially harmful to fish, wildlife, or other aquatic organisms. Development of borrow sites will not have any adverse effects on aquatic resources, cultural or historic resources, or any threatened or endangered species.

E: DESCRIPTION OF THE PROPOSED DISCHARGE SITES

A Draft Biological Resource Report was prepared for this study by an environmental consulting firm (Herrera Environmental Consultants, 2001). The report documents the methodology used in the wetland determination, describing the location, overall size, and type of wetlands identified within the project corridor. The report also describes the potential impacts to site wetlands that are associated with the build alternatives, and the proposed mitigation for each alternative. Table 2 (Wetland Location and Classification) is a summary of the wetland occurrence, wetland classification, and associated water bodies. Once all wetlands are delineated, an accurate size can be quantified for the amount of each wetland within the project corridor.

1) Location of Sites

Wetlands and surface waters (measured by area) impacted by the build alternatives are located within the Milk River drainage basin (HUC 10050001) and the Cut Bank Creek drainage basin (HUC 10030202). Accounting for less overall wetland area, but the largest number of individual wetlands, are prairie potholes. Prairie potholes are isolated depressional wetlands that are located within, but not tributary to, a specific drainage basin. The locations of wetland sites are described and identified in the draft Biological Resources Report, which was prepared for the study corridor, and are also listed in Table 2. Of the 54 wetlands that were identified in the project corridor, six (6) are located along Duck Lake Road. 30 of the 54 identified wetlands are isolated.

2) Size of Sites

The wetland boundaries were determined using the US Army Corps of Engineers' Wetlands Delineation Manual (1987). A project corridor width of 60 m (200 ft) both directions from centerline of both the existing and proposed alignments was inventoried for streams and wetlands. Wetland determinations were made based on both field data and literature review, with the approximate wetland boundaries detailed on project base maps.

Table 2 shows the estimated overall acreage of each wetland within the corridor at each specific location. The estimated size is given not just for the portion of the wetland in the project corridor, but has been determined for the overall size of each wetland.

3) Type of Sites

Wetlands in the project area are divided into four hydrogeomorphic categories: large riverine systems, small riverine systems, depressional systems (prairie potholes), and slope systems. The majority of individual wetlands identified in the project corridor are prairie potholes. However, riverine wetland systems comprise the majority (~97%) of delineated acreage. Riverine systems are wetlands that are associated with rivers and streams, which are the primary hydrological source for these wetlands. Prairie potholes are depressions in the landscape that are fed by surface water or groundwater. These depressional areas were formed by glaciation. The remaining wetland type, slope wetlands, are located on slopes that contain groundwater seeps, which are the hydrological source for the wetland. Wetlands that are associated with Waters of the United States, either through direct connection or through adjacency, are considered Waters of the United States, and are therefore considered jurisdictional wetlands (regulated by the U.S. Army Corps of Engineers).

4) Types of Wetland Habitats

Table 2 gives the type of wetland at each determined site including the hydrological category, vegetation dominance type (Cowardin, et al. 1979), and the associated water body.

5) Timing and Duration of Discharge

The timing and duration of construction activities will depend on the alternative chosen for that specific location and the type of construction (bridge, road widening, road realignment, and culvert installation). Detailed schedules and phasing plans will be prepared during the final design. The timing and duration will be determined to minimize

turbidity and other disturbances in the wetlands and streams. Construction schedules will be specified to not conflict with spawning and migration periods.

Table 2: Wetland Location and Classification

Wetland	Station ^a	Hydrogeomorphic ^b	USFWS ^c	State ^d	Associated Water Body	Size (ha/acre)
W1 ^e	390+00-393+00	riverine (upper perennial)	PSS/R3UBH	I	South Fork Milk River, north branch	8/20
W2 ^e	385+50-386+50	slope	PSS	III	South Fork Milk River, north branch	40/100
W3 ^e	369+50-375+00	riverine (upper perennial)	PSS	I	South Fork Milk River, middle branch	121/300
W4 ^e	358-362+50	riverine (upper perennial)	PSS/R2UBH	I	South Fork Milk River, south branch	405/1000
W5 ^e	354-356	slope	PSS	III	drains to South Fork Milk River, south branch	0.4/1
W6	352	depression (closed)	PEM	IV	isolated	0.2/0.50
W7	296-297	depression (groundwater)	PEM	IV	isolated	0.04/<0.1
W8	269-273+50	depression (open)	PSS	IV	isolated	<0.04/0.1
W9	266	depression (closed)	PEM	IV	isolated	<0.04/0.1
W10	261	depression (closed)	PSS	IV	isolated	<0.04/0.1
W11	260	depression (closed)	PEM	IV	isolated	0.008/0.02
W12	259	depression (closed)	PEM	IV	isolated	<0.04/0.1
W13	255	depression (closed)	PEM	IV	isolated	<0.04/0.1
W14	246	depression (closed)	PEM	IV	isolated	0.02/0.04
W15	245	depression (closed)	PEM	IV	isolated	0.008/0.02
W16	244	depression (closed)	PEM	IV	isolated	0.008/<0.01
W17 ^e	232-241+50	riverine (upper perennial)	PSS/PEM	I/III	South Fork Cut Bank Creek	809/2000
W18 ^e	228-232	riverine (upper perennial)	PSS	I	Lake Creek	40/100
W19	228	depression (closed)	POW	IV	isolated	0.04/0.11
W20 ^e	216+50-222+50	slope	PFO	III	South Fork Cut Bank Creek	0.11/0.28
W21 ^e	209+50-216+50	riverine (upper perennial)	PSS	I	tributary to South Fork Cut Bank Creek	81/200
W22	191-192	slope	PSS	III	isolated drainage	8/20
W23 ^e	181-187	riverine (upper perennial)	PSS	I	tributary to South Fork Cut Bank Creek	40/100
W24A ^e / W24B ^e / W24C ^e / W24D ^e	175+50-183	riverine (lower perennial)	PSS	I	South Fork Cut Bank Creek	809/2000
W25 ^e	161+50-162+50	riverine (nonperennial)	PSS	III	tributary to South Fork Cut Bank Creek	10/25
W26 ^e	133-136+50	riverine (upper perennial)	PSS/PEM/POW	III	Flatiron Creek	81/200
W27 ^e	122+50	depression (open)	PEM	IV	drains to Flatiron Creek	0.01/0.03
W28 ^e	113-116+50	riverine (upper perennial)	PSS/PEM PAB	III	Flatiron Creek	81/200

W29	111-112	depression (closed)	PEM	IV	isolated	0.6/1.4
W30	111	depression (closed)	PEM	IV	isolated	<0.05/ 0.12
W31	111	depression (closed)	PEM	IV	isolated	<0.05/ 0.12
W32	108	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W33	105	depression (closed)	PEM	IV	isolated	0.01/0.03
W34	104	depression (closed)	PEM	IV	isolated	<0.12/ 0.30
W35	104	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W36	103	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W37	102+50	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W38	97+50- 98+50	depression (closed)	PEM	IV	isolated	<0.20/ 0.50
W39	97+50- 98+50	depression (closed)	PEM	IV	isolated	<0.20/ 0.50
W40	97	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W41	95+50	depression (closed)	PEM	IV	isolated	<0.05/ 0.12
W42	92+50	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W43	90- 90+50	depression (closed)	PEM	IV	isolated	<0.41/1.0
W44	85	depression (closed)	PEM	IV	isolated	<0.08/ 0.20
W45 ^e	80-85	riverine (upper perennial)	PSS/PEM	III	Willow Creek	10/25
W46A ^e / W46B ^e	72- 79+50	riverine (upper perennial)	PSS/PEM	III	Willow Creek	10/25
W47	52-55	depression (open)	PEM	IV	isolated drainage	0.2/0.5
W48A/ W48B/ W48C	35+50- 40	depression (open)	PSS/PEM	IV	isolated drainage	0.3/0.75
W49 ^e	107+20	riverine (lower perennial)	PSS/R3USC	I	Cut Bank Creek	>800/ 2000
W50	597+60	depression (closed)	PSS/PEM	IV	isolated	0.2/0.5
W51	600+00	depression (closed)	PSS/PEM	IV	isolated	0.8/2.0
W52A ^e / W52B ^e	627+40/ 635+40	riverine (upper perennial)	PSS/PEM/ POW/R3USC	III	tributary to St. Mary River	>50/120
W53 ^e	645+20	riverine (upper perennial)	PAB/R3USC	III	tributary to St. Mary River	>50/120
W54 ^e	654+40	riverine (nonperennial)	PSS/R4SB	III	tributary to St. Mary River	>50/120

- a. Stationing indicated is the location along the proposed realignment of US 89 and Duck Lake Road. Milepost measurements are not available for the proposed realignment.
- b. The wetland group is based on three hydrogeomorphic categories: riverine, depression, and slope.
- c. USFWS classification of wetland vegetation in the project corridor is based on the following classes: palustrine open water (POW), palustrine aquatic bed (PAB), palustrine emergent (PEM), palustrine scrub/shrub (PSS), palustrine forested (PFO), riverine lower perennial perennially flooded (R2UBH), riverine upper perennial perennially flooded (R3UBH), riverine upper perennial unconsolidated shore seasonally flooded (R3USC), and riverine intermittent stream bed (R4SB) (Cowardin et al. 1979).
- d. The state of Montana divides wetlands into four hierarchical categories based on the physical attributes analyzed in the function assessment form. The state classification hierarchy ranges from category I wetlands, which exhibit outstanding features (i.e., uniqueness, threatened and endangered species habitat) to category IV wetlands, which exhibit minimal attributes or uniqueness.
- e. Jurisdictional wetlands, regulated by the U.S. Army Corps of Engineers.

F: DESCRIPTION OF DISPOSAL METHOD

The type of disposal methods will depend on the type of construction that is undertaken in a specific location. The following sections describe the general construction methods, which would be used for build alternatives selected to widen the existing US 89 highway, or construct a bridge or culvert in the vicinity of surface waters and wetlands.

Roadway widening: When widening the highway, it would be necessary to place fill in wetlands that are encountered along the highway. The fill material would be placed in the wetlands by large earth-moving and excavating equipment. The material would likely be from a nearby source (borrow) pits or excess material from other areas in the project corridor. The fill would be necessary to construct the proper side slopes and adjust the elevation of the roadway. Some removal of the existing roadway surface, topsoil, and structures will be necessary. Disposal of the material would be determined prior to construction of the project.

Bridge and Culvert Construction: Bridge construction would require that the streambed be excavated to construct the footings, piers and abutments for the structure. Where feasible, bridges would be built such that footings are outside of the wetland or stream area, effectively spanning the water body. New bridge footings and abutments will be outside ordinary high water. Only the historic bridge that is being widened will be within the channel. Culvert construction would also require excavation in the streambed or wetland to lay the pipe or box culvert. Some bridge piers and abutment footings use driven piling or drilled shafts, which result in minimal disturbance to the streambed and banks. Also, existing structures will probably need to be removed, except for where they may be preserving part or all of an historic bridge.

To minimize impacts, the Contractor would isolate the construction activities from the stream channel. This can be accomplished using cofferdams. Cofferdams are temporary structures, which are constructed in the streambed and enclose the construction activities. After they are in place, the river water trapped within the dam is pumped out to expose the riverbed and facilitate the excavation and construction activities. The excavated materials and pumped water from within the cofferdams would be transferred to a temporary settling pond to remove the sediment. The sediment would be disposed of in proper locations and the water would be returned to the stream. The locations of the settling ponds would be identified before the construction permits were obtained.

Cofferdams can be constructed by wrapping sheet pile or heavy plastic around steel piles, which are driven into the streambed. For piers and abutments, a concrete base is usually poured to seal the cofferdam. Temporary ladders and scaffolding would be required for workers to use during construction. Again, piling or drilled shafts would preclude the need to use cofferdams, if they are technically feasible given the geotech conditions.

Section 3: Factual Determinations (Section 230.11)

A: PHYSICAL SUBSTRATE DETERMINATIONS

1) Substrate Elevation and Slope

The elevation and slope of the streambeds, which will be impacted by the proposed project, would be adversely effected by any of the proposed build alternatives. A few of the streams will be re-aligned, depending on which build alternative is preferred.

Road widening would result in direct impacts on stream channel habitat at South Fork Cut Bank Creek (Wetland 17 [W17] and Wetland 24 [W24]) and Willow Creek (W46A). Two roadway realignments are under consideration at the South Fork Cut Bank Creek site (W17). Under the first option, the road would follow the existing alignment. The existing bridge would be replaced and the widened road would require the relocation of approximately 396 meters (1,300 feet) of stream channel on the west side of the highway. Under the second option, the road would be realigned about 25 meters (82 feet) east of the existing bridge alignment and a new crossing would be established. The impacts associated with each option are summarized in Table 3. Road widening in the vicinity of South Fork Cut Bank Creek (W24) would require the relocation of two short segments of stream channel located on the north side of the US 89 corridor. Road widening in the vicinity of Willow Creek (W46A) would require the relocation of two short segments of stream channel on the north side of the US 89 corridor.

Changes to natural surface flow patterns and changes in the natural erosion and accretion patterns will be avoided. The relocated streams would be configured to match appropriate natural conditions.

Table 3: Wetland Impacts

US 89 Study Area							
Wetland	Wetland Group	Associated Waterbody	USFWS	State Classification	Affected Area (ha/acre)	Affected Area (ha/acre)	Affected Area (ha/acre)
					Alternative B	Alternative C	Duck Lake Road Option
W1 ^a	large riverine (upper perennial)	South Fork Milk River, north branch	PSS/R3UBH	I	0.1/0.3	0.2/0.4	
W2 ^a	slope	South Fork Milk River, north branch	PSS	II	0.1/0.3	0.1/0.3	
W3 ^a	large riverine (upper perennial)	South Fork Milk River, middle branch	PSS	I	0.5/1.2	0.5/1.2	
W4 ^a	large riverine (upper perennial)	South Fork Milk River, south branch	PSS/R2UBH	I	1.2/2.9	1.2/3.0	
W5 ^a	slope	drains to South Fork Milk River, south branch	PSS	III	0.2/0.6	0.2/0.6	

US 89 Study Area							
Wetland	Wetland Group	Associated Waterbody	USFWS	State Classification	Affected Area (ha/acre)	Affected Area (ha/acre)	Affected Area (ha/acre)
					Alternative B	Alternative C	Duck Lake Road Option
W6	depression (closed)	isolated	PEM	III	<0.1/<0.1	<0.1/<0.1	
W7	depression (ground water)	isolated	PEM	III	0.0	0.0	
W8	depression (open)	isolated	PSS	III	<0.1/0.1	<0.1/0.1	
W9	depression (closed)	isolated	PEM	III	0.0	0.0	
W10	depression (closed)	isolated	PSS	III	0.0	<0.1/<0.1	
W11	depression (closed)	isolated	PEM	III	<0.1/0.1	<0.1/0.1	
W12	depression (closed)	isolated	PEM	III	0.0	0.0	
W13	depression (closed)	isolated	PEM	III	0.1/0.2	0.1/0.2	
W14	depression (closed)	isolated	PEM	III	0.0	0.0	
W15	depression (closed)	isolated	PEM	III	0.0	0.0	
W16	depression (closed)	isolated	PEM	III	<0.1/0.1	<0.1/0.1	
W17 ^a	large riverine (upper perennial)	South Fork Cut Bank Creek	PSS/PEM	I	1.0/2.6	1.4/3.6	
W18 ^a	large riverine (upper perennial)	Lake Creek	PSS	I	0.4/0.9	0.5/1.2	
W19	depression (closed)	isolated	POW	III	0.0	0.0	
W20 ^a	slope	South Fork Cut Bank Creek	PFO	III	0.3/0.8	0.4/0.9	
W21 ^a	large riverine (upper perennial)	tributary to South Fork Cut Bank Creek	PSS	I	0.1/0.3	0.2/0.4	
W22	slope	isolated drainage	PSS	II	<0.1/0.1	<0.1/0.1	
W23 ^a	large riverine (upper perennial)	tributary to South Fork Cut Bank Creek	PSS	I	0.1/0.2	0.1/0.2	
W24A ^a / B ^a /C ^a /D ^a	large riverine (lower perennial)	South Fork Cut Bank Creek	PSS	I	0.4/1.0	0.4/1.0	

US 89 Study Area							
Wetland	Wetland Group	Associated Waterbody	USFWS	State Classification	Affected Area (ha/acre)	Affected Area (ha/acre)	Affected Area (ha/acre)
					Alternative B	Alternative C	Duck Lake Road Option
W25 ^a	small riverine (nonperennial)	tributary to South Fork Cut Bank Creek	PSS	III	0.2/0.4	0.2/0.4	
W26 ^a	small riverine (upper perennial)	Flatiron Creek	PSS/PEM/POW	III	0.3/0.8	0.3/0.8	
W27 ^a	depression (open)	drains to Flatiron Creek	PEM	III	<0.1/0.1	<0.1/0.1	
W28 ^a	small riverine (upper perennial)	Flatiron Creek	PSS/PEM PAB	III	0.0	0.0	
W29	depression (closed)	isolated	PEM	III	<0.1/<0.1	<0.1/<0.1	
W30	depression (closed)	isolated	PEM	III	0.0	0.0	
W31	depression (closed)	isolated	PEM	III	0.0	0.0	
W32	depression (closed)	isolated	PEM	III	<0.1/0.1	<0.1/0.1	
W33	depression (closed)	isolated	PEM	III	0.0	0.0	
W34	depression (closed)	isolated	PEM	III	0.0	0.0	
W35	depression (closed)	isolated	PEM	III	<0.1/<0.1	<0.1/<0.1	
W36	depression (closed)	isolated	PEM	III	<0.1/0.1	<0.1/0.1	
W37	depression (closed)	isolated	PEM	III	0.0	0.0	
W38	depression (closed)	isolated	PEM	III	0.0	0.0	
W39	depression (closed)	isolated	PEM	III	0.0	0.0	
W40	depression (closed)	isolated	PEM	III	0.0	0.0	
W41	depression (closed)	isolated	PEM	III	0.0	0.0	
W42	depression (closed)	isolated	PEM	III	0.0	0.0	
W43	depression (closed)	isolated	PEM	III	0.0	0.0	
W44	depression (closed)	isolated	PEM	III	0.0	0.0	
W45 ^a	small riverine (upper perennial)	Willow Creek	PSS/PEM	III	0.1/0.2	0.1/0.2	

US 89 Study Area							
Wetland	Wetland Group	Associated Waterbody	USFWS	State Classification	Affected Area (ha/acre)	Affected Area (ha/acre)	Affected Area (ha/acre)
					Alternative B	Alternative C	Duck Lake Road Option
W46A ^a /B ^a	small riverine (upper perennial)	Willow Creek	PSS/PEM	III	<0.1/0.1	<0.1/0.1	
W47	depression (open)	isolated drainage	PEM	III	0.3/0.8	0.3/0.8	
W48A/B/C	depression (open)	isolated drainage	PSS/PEM	III	0.7/1.8	0.8/1.9	
W49 ^a	large riverine (lower perennial)	Cut Bank Creek	PSS/ R3USC	I			0.2/0.4
W50	depression (closed)	isolated	PSS/PEM	III			0.0
W51	depression (closed)	isolated	PSS/PEM	III			0.0
W52 ^a	small riverine (upper perennial)	tributary to St. Mary River	PSS/PEM/ POW/ R3USC	III			0.1/0.2
W53 ^a	small riverine (upper perennial)	tributary to St. Mary River	PAB/ R3USC	III			0.4/1.1
W54 ^a	small riverine (nonperennial)	tributary to St. Mary River	PSS/R4SB	III			0.1/0.2

a. Jurisdictional wetlands, regulated by the U.S. Army Corps of Engineers.

2) Compare Fill Material and Substrate at Discharge Site

At stream crossings, the substrate is expected to be smooth cobbles with clean gravels and fine sediments along the embankments and in the streambed. The fill used would be select granular backfill having very similar characteristics. (Fill may also be whatever is suitable given MDT or AASHTO fill requirements.)

Substrates in wetland areas could be fine sediments, organic soils (histosols), or glacial outwash that is common to many wetlands in this sort of area, supplied by feeder streams and precipitation runoff. The fill material placed in the wetlands or stream crossings would either be granular material from nearby sources or excess material from the project itself. Fill material used will be suitable for construction of a roadway.

3) Dredged/Fill Material

The fill materials used in the stream crossing would be granular materials that are not susceptible to movement by water action. Any fill that is placed in wetlands or streams for the construction of the proposed alignment will be done in such a manner as to avoid or minimize to the greatest possible extent movement due to erosion.

4) Physical Effects on Benthos Invertebrates/Vertebrates

1) Physical Effects on Benthos

Benthic organisms would only be impacted along the streambank or in the wetland area where fill material would be placed. (Also, sediment can be washed downstream and affect benthics downstream.) In the long term, the benthic organisms would relocate and re-establish themselves in the fill material. Therefore, the only physical effects on benthos should be short-term localized impacts.

2) Invertebrates

Similar to the effects on benthos, the impacts to aquatic invertebrates will also primarily be short term. Fill material placed along the riverbank or in wetlands would bury existing organisms, but new organisms would be expected to quickly re-establish themselves in these areas. Additionally, construction activities could cause localized increases in suspended sediment, which would adversely effect aquatic insects that rely upon the site to find food. Increased sediment levels also clog interstitial spaces in the riverbed which invertebrates use for habitat, but such will quickly regenerate when turbidity is abated and “flushing” occurs.

3) Vertebrates

Sediment from the erosion of disturbed areas is the primary source of adverse impacts to aquatic vertebrates. For the project area, “aquatic vertebrates” applies primarily to fish. Sediment in streams affects fish by increasing sediment deposits in spawning gravel and rearing habitat. This suffocates the eggs or fry and affects the aquatic organisms that fish rely on for food. Sediment is also abrasive to fish gills. The use of Best Management Practices (BMP) for erosion control should alleviate these adverse impacts or reduce them to short-term and tolerable levels.

Whenever possible, construction should be timed so that it does not coincide with spawning runs when migration movements could be disrupted or blocked. Also, structure types and construction methods (i.e., driven piling for piers instead of excavated and cast-in-place footings that require cofferdams) can avoid or minimize construction impacts at bridges.

Toxic materials can also cause problems for fish. Toxins can be introduced to the stream by runoff or through accidental spills or contact with hazardous materials. Again, Best Management Practices during construction should minimize these problems.

5) Erosion and Accretion Patterns

The majority of the existing culverts and bridges along the project corridor are inadequately sized to handle high-flow conditions. The streams associated with undersized crossing structures will experience flooding upstream of the structure during high-flow conditions, causing erosion or deposition and widening of the natural channel. Eroded material may then be deposited downstream, and may potentially alter the course of the river.

The crossing structure located at MP 12.4 handles flow for Lake Creek. The structure consists of two 0.76 m (30-inch) culverts and two 1.5 m (5-foot) culverts, which are oriented almost perpendicular to the stream flow. This has caused the stream flow to impact the stream bank prior to making a turn to enter the culverts, causing chronic erosion.

Replacement of culverts to sizes that will accommodate the flows associated with a storm event, and re-orientation to match stream flows will reduce and minimize the impacts associated with current erosion. At the Lake Creek crossing (MP 12.4) a bridge would replace the current culverts. Hence, the impacts associated with both of the proposed build alternatives at this stream crossing would be beneficial. Specific impacts at each of the named and unnamed drainages will be quantified and described once a design alternative has been decided upon, and final design is completed.

6) Actions Taken to Minimize Impacts

Measures can be incorporated into the proposed action to minimize the impacts to streams and wetlands. Once specific impact are identified at each wetland or stream/drainage crossing, actions taken to minimize impacts will be described for each wetland or stream/drainage crossing.

- a) Select the “no action” alternative if practicable.
- b) Design to avoid wetland or stream areas if at all possible by shifting alignment or altering grade.
- c) Place the fill in the smallest area possible.
- d) Use fill materials that are similar to the substrate whenever possible.
- e) Schedule the timing and duration of the construction activities to coincide with the lowest flows possible.
- f) Use the Montana Department of Transportation Highway Construction Standard Erosion Control Work plan to identify Best Management Practices for erosion control that are specific to any proposed actions. The goal of the plan will be to prevent erosion of disturbed areas and minimize the discharge of pollutants and sediments into surface waters. The Contractor for improvements will be required to follow the recommended BMP's. The selection of the BMP's would be done during the final design activities and at the discretion of the highway designer.

B: WATER CIRCULATION, FLUCTUATION AND SALINITY DETERMINATIONS

1) Water

The Draft EIS contains a discussion of surface waters and their associated quality. The following sections discuss the proposed action's impact on various components of the water quality.

None of the streams located within the project corridor are listed on the state 303(d) list.

a) Salinity

No site specific tests for salinity have been performed. However, observations of streams and wetlands in the project corridor showed no saline areas. Although velocities are slow, water in wetland areas is continually resupplied and drained away. There are no known impoundment areas where water could be reasonably expected to increase in salinity. Such changes would most likely result from altering the hydraulic regime and interconnection of wetlands and streams or the use of fill materials significantly different from native soils. Neither of these changes are predicted to occur as a result of the proposed action.

b) Water Chemistry

Although no site-specific tests have been performed, there is no reason to suspect that the proposed action would significantly alter the alkalinity, hardness, pH level, or mineral concentration in surface waters.

c) Suspended Sediments

Construction could cause temporary, localized, minor increases in suspended sediments during construction activities, especially near streams where fines in the new fill material are transported from the disposal sites by water currents. Stable, granular fill materials and appropriate construction methods would be used to minimize these impacts. Instream Work will not be allowed during periods of expected high flow (like spring runoff).

d) Clarity

During the placement of fill materials in wetlands and streams, there may be temporary, localized increases in turbidity. These increases in turbidity would be very minor compared to the increases, which naturally occur during spring run-off conditions or after heavy rainstorms. This short-term impact would be minimal. However, even minor increases that do not occur with a corresponding spike in the hydrograph can be very damaging to aquatic ecosystems (no flushing would occur, and gravels could be smothered, etc.). The use of appropriate erosion control BMP's will help to avoid or minimize temporary, localized increases in turbidity.

e) Color

The placement of fill materials in wetlands and streams could disrupt the substrate and increase the suspended sediments and turbidity in the water. This would have the effect of temporarily and locally altering the color of the waters in the vicinity of the construction activity, especially immediately following the fill placement. This change in color would be similar to the change in color during the spring runoff when high concentrations of sediments from the surrounding drainages give the water a milky color.

f) Odor

The project will not change any natural odors in the streams or wetlands.

g) Taste

The project will not significantly alter the taste of the surface water or the groundwater in the project area precluding any unknown spills or highly abnormal conditions.

h) Dissolved Gas Levels

Improvements are not expected to significantly increase the turbulence of flows, cause stagnation in streams and wetlands, or cause other changes to hydraulic regimes; therefore, it is unlikely that the existing dissolved gas levels will be altered in any way.

i) Nutrients

Current sources of nutrients such as phosphorous and nitrogen predominantly come from non-point agricultural sources, and other naturally occurring high organic loads such as decaying algae. None of these conditions are expected to be impacted by the proposed action and since the hydraulics of wetlands and surface waters throughout the project area will be maintained, there should be no impact from nutrient loading.

j) Eutrophication

The proposed action is not expected to contribute significant quantities of sediment or nutrients to project vicinity surface waters or wetlands. The waters that will be impacted by the proposed project are primarily streams and wetlands, not lakes. Streams are generally well mixed and plant growth induced by excessive nutrients is generally not a problem. Wetlands are, by their nature, already subject to eutrophication. Since there will be no significant increase in nutrients and the hydraulic regimes will be preserved, there are no anticipated impacts from increased eutrophication. When small hydrologically isolated wetlands (potholes) are partially filled, eutrophication may occur more rapidly. Once final design has been completed, potential impacts from eutrophication can be quantified.

2) Current Patterns and Circulation

a) Current Patterns, Drainage Patterns, Normal and Low Flows

All of the local cross-highway drainage crossings and patterns will be maintained if they are presently adequate to maintain natural current and drainage patterns. Hydraulic characteristics that are currently adversely affected by inadequate crossings would be restored to natural conditions under both of the proposed build alternatives. Seasonal variations in stream flow and groundwater table naturally affect flow volumes and hydraulic patterns. However, none of the proposed improvements are expected to change or alter these patterns and the total flow of water should not be altered.

b) Velocity

The intent of the design of the new bridges will be to maintain the existing velocities in the streams if it is representative of a suitable natural condition. The drainage culverts will be designed to have no more than minimal effect on the hydraulic flow characteristics of the natural system, including velocity.

c) Stratification

Proposed improvements are not expected to alter the current stratification of waters in any of the streams or wetlands.

d) Hydrological Regime

The project is not be expected to affect any of the existing hydrologic regimes of the streams or wetlands in the project area.

e) Aquifer Recharge

The proposed action is not expected to have any adverse effect on the quality or extent of any aquifer recharge.

3) Normal Water Level Fluctuations

Bridge openings and culverts will be sized and designed to maintain the existing natural velocities without altering the stream elevation or causing backwater problems. All crossings will be designed so that movement of aquatic life indigenous to the waterbody is not disrupted. This includes designing culverts to ensure the passage of fish. The minimum culvert size, for maintenance reasons, is a 24-inch diameter under the highway and 18-inch under road approaches. This criteria will also influence culvert sizing.

4) Salinity Gradients

Although site visits indicate locations of salinity in the extended project vicinity, none are known to occur within the project corridor (including the Duck Lake Road Option). Salinity gradients will not be affected.

5) Actions That Will Be Taken to Minimize Impacts

To minimize impacts the following measures will be taken:

- a) Bridge and culvert openings will be sized to maintain the appropriate natural water levels and velocities in the streams.
- b) Culverts and hydraulic structures will be sized to maintain natural cross-highway drainage patterns, and to allow for passage of fish and other aquatic life.
- c) Fill material will not cause more than minimal changes to the natural hydraulic flow characteristics of the streams or increase flooding.

C: SUSPENDED PARTICULATE/ TURBIDITY DETERMINATIONS

1) Expected Changes in Suspended Particulate and Turbidity Levels in the Vicinity of the Disposal Site

The placement of fill at stream channel crossings may introduce some fine materials to the surface waters, which would cause temporary increases in the level of suspended particulates during construction. The placement of fill may re-suspend bottom sediments. As a result, turbidity levels may temporarily increase in the vicinity of stream or wetland encroachments.

Stormwater runoff from areas in the vicinity of streams and wetlands can also transport sediment to the surface waters. This would result in an increase in suspended

particulates and turbidity levels. It will be necessary to ensure that a standard erosion control work plan is carefully established and followed to keep erosion at a minimum. Removal of sediment that erodes into a wetland from disturbed areas on the project will be required.

2) Effects on Chemical and Physical Properties of the Water Column

a) Light Penetration

Increased levels of suspended particulates and turbidity in the surface waters near the construction site can also decrease the amount of light penetration. These impacts would be short-term and would occur only temporarily during the construction activities.

b) Dissolved Oxygen

The suspended particulates introduced to the surface waters by the placement of soil will be for the most part inorganic. Therefore, no additional Biochemical Oxygen Demand (BOD) should occur. In addition, the proposed action should not result in any increased turbulence or stagnation of the surface waters to the point of affecting the dissolved oxygen levels.

c) Toxic Metals and Organics

Since the fill materials used for construction will be suitable for highway construction, it should be free of high organic content and toxic metals. No fill material will be taken from any hazardous material site identified in the Hazardous Material Section of the EIS.

d) Pathogens

There are no known major sources of viruses or pathogenic organisms in the project area, although livestock and wildlife waste is evident in places throughout the corridor. The use of clean, inorganic fill material would prevent the introduction of pathogens in surface waters. At this time the potential presence of Whirling disease is not known, nor is the history of botulism in wetlands associated with the project area.

e) Aesthetics

The project would affect the aesthetics of surface water in the project area in a condition similar to the spring runoff conditions, albeit at a reduced scale. The effects would be temporary, localized, and occur near or just downstream of the actual construction activities. The expected impacts are the increased suspended particulate levels in the surface waters near the placement activity, which should disperse as the distance from the source increases.

3) Effects on Biota

a) Primary Production, Photosynthesis

The project should not substantially lower the rate of photosynthesis and primary productivity in surface waters. As indicated in the previous section, changes in suspended particulates and turbidity levels are expected to be localized and temporary. These conditions should not be significant enough to affect the level of dissolved oxygen in the surface waters.

b) Suspension/ Filter Feeders

Suspension and filter feeders capture and use organic particles suspended in the water current. Due to the increased levels of suspended particulates and turbidity near construction activities, these organisms would be impacted. Excessive sediment can bury organisms, abrade their gills, and damage their habitat. However, the impacts would be very localized and short-termed. The organisms would be expected to naturally repopulate the area very quickly after the construction activities have been completed.

c) Sight Feeders

Sight feeders rely on clear water to find their food. Therefore, they would be impacted by the short-term, localized increases in suspended particulates and turbidity due to the placement of fill materials. Similar to filter feeders, excessive sediment can bury these organisms, abrade their gills, and damage their habitat. Suspended particulates and turbidity should rapidly diminish after the actual placement of fill materials, allowing quick recovery for sight feeders.

4) Actions Taken to Minimize Impacts

The primary action taken to minimize impacts resulting from suspended particulates and turbidity in the surface waters is to establish an erosion control work plan. The work plan will be selected, designed, and implemented to prevent or reduce erosion and release of sediment from construction areas. For this purpose, the Standard Erosion Control Work Plan for the Montana Department of Transportation will be used. Temporary, site-specific erosion control structures or practices will be selected based on Best Management Practices for highway construction projects.

The work plan will be used to acquire a National Pollution Discharge Elimination System permit. The goals of the erosion control plan will be to plan the development for the project setting, to avoid or minimize the extent of disturbed area and duration of exposure, to stabilize and protect disturbed areas as soon as possible in order to keep runoff velocities low, to protect disturbed areas from runoff, retain sediment within the corridor, and implement a thorough maintenance and follow-up program. BMP's used may include slope roughening, temporary seeding, mulching, erosion control blankets, straw bales, gravel filter berms, ditches, silt fences, and settling basins.

D: AQUATIC ECOSYSTEM AND ORGANISM DETERMINATIONS**1) Effects on Special Aquatic Sites****a) Sanctuaries and Refuges**

State, federal, or local agencies have not designated any wildlife or waterfowl sanctuaries or refuges within the project area. Therefore, none would be impacted by this project. The proposed project should also not have any indirect affect on Glacier National Park or on any special Blackfoot areas of this type.

b) Wetlands

The amount of jurisdictional wetlands occurring within the project area is detailed in Table 2. Only those wetlands completely or partially located in the project corridor (about 60 meters on either side of the road) were delineated. There are a variety of

wetland resources in the area. US 89 crosses perennial and intermittent streams twelve (12) times in the project corridor. Riparian communities dominate many of these. Riverine wetlands comprise approximately 70% of the total impacted wetland acreage.

Alternative B and Alternative C are anticipated to impact approximately 6.4 ha/16.1 acres and 7.2 ha/17.9 acres respectively. These amounts are reduced from the 7.9 ha/19.6 acres-11.7 ha/29.0 acres initially estimated for the build alternatives. Substantial efforts have been made to redesign the highway alignment and grade to reduce impacts to this lower level. These estimates are for impacts along US 89 only. The approximate impacts associated with improvements to Duck Lake Road are 0.8 ha/1.9 acres. Approaches to mitigate the impacts to these wetlands will be discussed in Section 3.D.6 of this evaluation.

c) Mud Flats

There are no mud flats in the project area, and the project will not create any new mud flats.

d) Vegetated Shallows

These are areas that are permanently inundated and support rooted, aquatic vegetation. These areas are generally classified as wetlands. There are no vegetated shallows in the project corridor, and the project will not create any new vegetated shallows.

e) Riffle and Pool Complexes

Riffle and pool complexes occur when the gradient of the stream channel varies from steep to shallow. Most of the crossings associated with US 89 in the project corridor are in reaches of streams with a low gradient. The gradient of these streams is as such to form riffle/pool complexes. However, there are a few streams such as Lake Creek, Cut Bank Creek, South Fork Cut Bank Creek, and the north branch of the South Fork Milk River that have a moderate gradient. These streams are riffle dominated with infrequently spaced pools. Rapids dominate between the infrequently spaced pools. Whereas bridges and culverts will be engineered to maintain existing hydraulic characteristics, adverse impacts on these complexes are not anticipated. All of the riffle/pool complexes within the project corridor will need to be delineated prior to final design. After which, specific impacts to each riffle/pool complex can be quantified.

2) Effects on Threatened and Endangered Species and Their Habitats

USFWS has reported that six Threatened and Endangered species may occur in the US 89 project vicinity. While habitat for the mountain plover, grizzly bear, gray wolf, Canada lynx, and bull trout exists in the project vicinity, only the occurrence of a bald eagle has been reported. The Montana Natural Heritage Program (MNHP) identified one bald eagle nest at Two Medicine Lake approximately 5 km (3 miles) south of the US 89 corridor. The proposed action alternatives would not have a direct impact on the nesting site.

The habitat in the US 89 corridor provides important grizzly bear foraging habitat in early spring and supports grizzly bears during each month they are not in their dens. Grizzly bears are active in the project corridor and the western portion of the Duck Lake Road corridor near Babb roughly between April and November. The project area is located within the southeast Glacier bear management unit (BMU) in the northern continental divide grizzly bear recovery area. The BMU is managed by the Blackfoot Tribe under

the guidelines of management situation 2. Management situation 2 areas lack distinct grizzly bear population centers and high suitability habitat generally does not occur, though the habitat in the project corridor has never been fully evaluated to confirm that the management situation 2 designation is the most appropriate management for this area. The primary effects of the proposed project on grizzly bears would be disturbance of foraging habits during construction, loss of habitat, a potential decrease in habitat value, and increased difficulty crossing the 89 corridor. These impacts are attributed to the extent of vegetation disturbance, the wider road surface combined with reduced vegetative cover along the roadway, and increased vehicle speeds. Since grizzly bears typically avoid habitats in close proximity to roads, this impact is not expected to adversely affect grizzly bears. However, because grizzly bears are often found in close proximity to roads at important foraging components, timing restrictions for construction would be implemented at key habitats in the corridor. The Biological Assessment (BA) section of the Biological Resource Report further details the effected grizzly bear habitat and actions taken to minimize potential impacts to grizzly habitat during construction.

Populations of bull trout in Montana are limited to the Columbia and Saskatchewan River basins. The St. Mary River, in the Saskatchewan basin, contains the only bull trout populations east of the continental divide in the United States. Sampling efforts in the St. Mary River and its tributaries, including the Duck Lake vicinity, identified no bull trout. The tributaries of the St. Mary River that cross Duck Lake Road in the project area do not provide habitat for bull trout. The Biological Resources Report, which will serve as the Biological Assessment (in accordance with section 7(a) of the federal Endangered Species Act of 1973), will further detail potential impacts to threatened and endangered species.

A Biological Assessment is currently being completed for the proposed project. After consultation, and concurrence of the Biological Assessment, the effect determination will be included in this evaluation.

3) Effects on Other Animals

The US 89 project corridor contains a large diversity of mammals, birds, amphibians and fish species. The various assorted grasslands, coniferous and deciduous forests, wetlands and uplands provide excellent habitat for these species, including deer, elk, moose, migratory birds, red fox and mink.

The effects on animals that are mobile will be greatest during the construction phase of the proposed project. This will be due to the increased noise and human activity. The animals that will be affected the greatest are those that are not mobile, and will not be able to leave the project area. Impacts will be mostly associated with loss of vegetation and habitat due to construction activities, as well as impacts due to harassment by noise, dust, etc during construction.

The Biological Resources Report will further detail potential impacts to area animals and their habitat.

4) Effects on Terrestrial Plants

Portions of plant communities will be lost as a result of wetland filling, which will locally reduce forage production and photosynthesis (primary production). This reduction will

have a negligible impact on wildlife and livestock given the small acreage of plant communities that will be disturbed or destroyed, and the dispersal of the disturbance sites throughout the corridor.

One plant species that is on the candidate species list may occur in the project area. The slender moonwort (*Botrychium lineare*) occurs in nine known locations in the United States, three of which are in Glacier County, Montana. The population nearest the project area occurs near US 89 in St. Mary. This site is beyond the project corridor for the US 89 improvement project.

Fill of wetlands will disturb existing plant communities and enhance the possible proliferation of noxious weeds. Highway reconstruction and other activities in or adjacent to wetlands or surface waters present the potential for spreading noxious weeds. Invasion of wetlands by species such as spotted knapweed, Canada thistle and purple loosestrife is a primary concern. Best Management Practices must be used in an effort to avoid the introduction of noxious plant species into disturbed construction and fill areas.

5) Actions Taken to Avoid and Minimize Impacts

According to the Clean Water Act, Section 404 Guidelines, and the State of Montana's Interagency Memorandum of Understanding (1992), permit issuance will only be allowed for the least environmentally damaging, practicable alternative. No discharge of materials into wetlands or other waters of the United States can be permitted if there is a practicable alternative to the proposed discharge which would have less adverse effects to the aquatic ecosystem and as long as the alternative did not have other significant adverse environmental consequences. Therefore, the preferred alternative will be carefully selected to represent the least damaging, practicable alternative.

After review of the proposed alignment by project biologists, tribal biologists, US Army Corps of Engineer regulatory staff, and representatives from MDT, suggested modifications to the alignment were made in order to avoid and minimize wetland and stream impacts. As a result of these efforts, approximately 2.1 hectares (5.2 acres) of wetland impact will be avoided. Please refer to Table 1 for specific information regarding wetland impact acreage avoidance.

Additional efforts to minimize impacts to wetlands are as follows:

- a) Whenever possible, steeper fill slopes and smaller fill volumes will be used for construction in wetlands and stream crossings.
- b) Perform work in and around wetlands from an existing roadway or uplands site.
- c) Clearly mark the limits of clearing to minimize intrusion into wetland habitats.
- d) To limit wetland disturbance, the construction plans would specify that clearing and grubbing beyond the construction limits (not the right-of-way limits) is prohibited, and any temporary clearing outside the construction limits, but within the right-of-way, necessary for culvert installation or other similar activities would be kept to the smallest area possible and would be reclaimed following construction.

- e) Phase land-disturbing activities through the project corridor to minimize the area of exposed soil at any point in time.
- f) Widen the roadway to the north at wetland 4 (W4) to avoid higher quality, forested wetlands on the south side of the road.
- g) Increase the capacity of culvert crossings under the roadway at locations where the lack of culverts or undersized culverts currently limits the natural hydrologic regime of wetlands.
- h) Replace culverts with new culverts that will improve hydrology in wetland systems and adequately convey the entire stream channel at stream crossings.
- i) Perform culvert replacements and bridge construction at riparian crossings during the drier summer months.

Timing restrictions for construction would be implemented at key habitats in the corridor in order to avoid grizzly bears that would be using foraging areas in the project corridor. The Biological Resource Report details specific locations and timing restrictions that would be implemented.

Construction restrictions may also be necessary for other species, and will be identified in the Biological Assessment.

6) Compensatory Actions Taken to Minimize Impacts

Although all possible action will be taken to avoid and minimize impacts to wetlands and surface waters, some compensatory mitigation will still be required. It is the current policy of the US Environmental Protection Agency and the Department of the Army, Corps of Engineers to provide compensatory mitigation in-kind (i.e., wetland for wetland, stream for stream) and in areas adjacent to or within the project area whenever possible. After these efforts are exhausted, then off-site compensatory mitigation should be pursued.

The concept of compensatory mitigation is to replace functions of wetlands that will be impacted by the proposed action. The approach to compensatory mitigation adopted by MDT policy is to follow a sequence of mitigation events. First, provide mitigation by developing replacement wetlands on-site. If on-site mitigation is not available, or does not provide compensation to the extent necessary, then off-site mitigation opportunities within the watershed should be examined. All compensatory mitigation sites must be permanently protected by a conservation easement or similar restriction.

It is recognized that replacement of a natural wetland community is a difficult and challenging process that requires a lengthy period of time, careful design, thorough development of vegetation plans, and constant monitoring to evaluate the success and to modify the plans where measures have not met with success.

While other considerations are discussed below under off-site mitigation, the key to any replacement or enhancement option is to maintain or establish a reliable source of water to the new area. Even though wetland hydrology is the most difficult parameter to replicate or create in a newly constructed wetland, it is felt that the prevailing conditions

in the project area are conducive to providing both surface and groundwater sources that can be utilized to increase the chances for long-term success in compensatory wetland mitigation.

Permits for placement of fill in wetlands would be required from the Blackfeet Tribe, under Executive Order 11990, and from the Corps under Section 404 of the Federal Clean Water Act. As part of the permitting process, compensatory mitigation is required when impacts can not be avoided during project design. Where impacts are unavoidable, compensatory mitigation could be provided by establishing, enhancing, and/or restoring (rehabilitation or re-establishment) wetland habitat of a similar type and function to what was lost. The Corps allows wetland impacts to be compensated at a ratio of 1:1 for restoration (re-establishment) and establishment (creation) of wetlands. Larger mitigation ratios will apply for enhancement or wetland rehabilitation. The Corps does not regulate impacts on isolated wetlands (i.e., those wetlands that are isolated from waters of the U.S., such as prairie potholes). Compensatory mitigation amount will be determined based on the appropriate mitigation ratios and exact impact amount after final design is complete. The Blackfeet Environmental Office has recently proposed changes to its mitigation policy. These changes have not yet been adopted by the Tribal Council. If the new policy is approved by the Tribal Council, the project would compensate for unavoidable wetland impacts in accordance with the new guidelines.

A description of the sequential considerations for compensatory wetland mitigation follows:

a) On-site Mitigation

On-site mitigation opportunities identified to date include the following:

- Obliterating the existing road and re-establishment of wetlands where the roadway is realigned (such as W8, W18, W21, and W23, etc., see Appendix A)
- Creating (establishing) additional wetland area at Lake Creek in conjunction with the proposed realignment
- Creating (establishing) additional wetland area at South Fork Cut Bank Creek (W17) in conjunction with the proposed stream relocation
- Replacing existing culverts with culverts that will allow for the necessary life cycle movements of aquatic species indigenous to the waterway and to increase habitat availability in the study area.

b) Off-site Mitigation

Compensatory wetland mitigation must occur in the same drainage basin as the affected wetland or resource. The US Army Corps of Engineers (Corps) must approve any compensatory wetland mitigation plan that is intended to satisfy Section 404 permit requirements. The compensatory mitigation plan must be

developed prior to issuance of Section 404 authorization. Sites in the immediate vicinity are preferred over sites farther upstream or downstream. These criteria may be difficult to meet in the US 89 project corridor, because wetland mitigation is often incompatible with land uses in the corridor such as crop production and livestock grazing. Mitigation for unavoidable wetland impacts can also include off-site improvements, providing funding for other mitigation projects in the watershed, or the MDT Wetland Mitigation Ledger. Off-site mitigation opportunities identified to date include the following:

- Implementing one of the mitigation projects contained on the list of priorities maintained by the Blackfoot Tribe
- Purchasing and establishing protection easements on properties containing high densities of prairie potholes
- Providing funding to the Blackfoot tribal wetland mitigation program.

c) Wetland Banking

No mitigation banks exist in Montana at this time. However the use of the MDT Wetland Mitigation Ledger may remain an option if the use of on-site and off-site mitigation is not adequate to compensate for impacts from the proposed project. If the ledger is used, the Corps will likely require higher ratios due to the temporal and spatial loss in wetland function and acreage.

As the roadway designs are advanced, additional opportunities to avoid impacts and minimize unavoidable impacts on wetlands will be explored and additional mitigation opportunities in the project corridor will be identified. Based on the wetland impacts identified to date and the resulting effects on wetland functions, the following priorities will direct the selection of mitigation for the proposed project:

- Continue to identify opportunities to avoid or minimize wetland impacts through project design.
- Attempt to provide on-site mitigation at a replacement ratio of 3:1 for all wetland impacts in the project corridor.
- Attempt to mitigate at the location of the impact or in the same localized drainage basin.
- Replace all impacted wetland functions.
- First identify sites that offer wetland restoration (re-establishment and rehabilitation) opportunities, and give secondary consideration to sites suitable for creation (establishment) and enhancement.
- Identify additional offsite or out-of-kind mitigation opportunities if onsite and in-kind mitigation cannot be achieved or is

impracticable. However, out of kind will generally not be eligible for crediting by the Corps; this will be evaluated on an as-required basis.

- When the above are not practicable, consider using MDT's wetland ledger. The ledger would allow MDT to develop wetlands in the general area, and then, as wetland losses occur, to subtract the acreage from the developed wetland.

7) Monitoring of Mitigation Actions

To ensure compliance with wetlands policy and increase the chance for successful mitigation efforts, inspections will be made by the Project Manager, MDT's Wetland Biologist, and other agency representatives before, during, and after the wetlands replacement. These inspections are likely to occur as follows:

- a) During the plan-in-hand visit prior to initiating development of the wetland.
- b) At a visit made prior to the final grading for the wetlands.
- c) When the wetland is planted.
- d) The first full summer after the completion of the wetland construction to determine the preliminary success of the mitigation project.
- e) Use the protocols and forms developed by MDT in conjunction with their monitoring contract. Typically runs 5 years, with annual reporting requirements.
- f) In the fourth or fifth season after establishment of the wetland area to obtain enough data and observation to determine whether or not the mitigation has been successful (final inspection). The mitigation will be considered successful if it meets the US Army Corps of Engineers criteria for a wetland under their Wetland Delineation Manual (1987). If not, plans can be formulated for correction or a decision made to abandon the site and try elsewhere if solutions to assure success at the site are not apparent.
- g) On a periodic basis to assure no adverse changes in groundwater hydrology (long-term monitoring).

Implementation of the proposed action will also be field-reviewed during construction by various agencies including MDT, the Army Corps of Engineers, the Montana Department of Environmental Quality, and the Montana Department of Fish, Wildlife, and Parks to ensure that the construction activities will not unacceptably impact surface waters or wetlands, that additional impacts requiring additional mitigation are not being created, and that provisions of all the permits issued are being adhered to.

It will also be necessary to ensure that the mitigation sites are protected permanently with a conservation easement or similar protective covenants. If not possible on the reservation, the Corps may require additional sites off of the reservation but within the watersheds to satisfy 404 obligations.

E: POTENTIAL EFFECTS ON HUMAN USE CHARACTERISTICS

Recreation associated with hunting, in the affected area, will be lost during the construction phase of the proposed project due to loss of wildlife habitat and temporary displacement of wildlife. Restricted access to the project area for hunting purposes will also affect human use.

Livestock grazing potential will be lost on areas where rangeland vegetation is destroyed or where livestock are prevented from grazing in close proximity to the highway widening project. This impact will be negligible because the project area comprises only a small portion of rangeland currently being utilized for livestock production.

The proposed project will not adversely affect municipal, private, or potential water supplies. Private wells are used for domestic and agricultural purposes within the project area. The proposed action will not affect the quality or productivity of these water supplies.

Fishing is a major recreational activity on most of the major streams in the project area. The proposed action will affect fishing activities as temporary sediment loading of the streams, downstream of the construction activities, affects resident fish populations. These impacts are expected to be temporary.

The proposed activity will affect motorists using US 89 between Browning and Hudson Bay Divide during the construction season. US 89 serves the Blackfeet Indian Reservation and the east entrance to Glacier National Park. Construction activities may delay motorists, who may view it as an inconvenience. These impacts are negligible, as the proposed project when completed will enhance overall traffic flow.

F: DETERMINATION OF CUMULATIVE EFFECTS ON THE AQUATIC ECOSYSTEMS

Cumulative effects are the changes in aquatic ecosystems attributable to the collective effects of a number of individual discharges of fill material. Although the impact of a particular discharge may be a minor change in itself, the cumulative effect of many such changes can result in major impairments of water resources and interfere with the productivity and water quality of surface water and wetlands.

Losses in wetlands are anticipated from future activities to reconstruct and improve US 89 from Browning to Hudson Bay Divide. Increases in regional wetland acreage are anticipated through on going and planned wetland creation and enhancement projects. Cumulatively, planned and ongoing water quality and wetland projects will offset impacts that will result from temporary loss of wetlands in the project area.

Highway reconstruction and other activities in or adjacent to surface waters and wetlands present the potential for spreading noxious weeds. Invasion of wetlands by non-native or invasive plant species can affect native wetland communities. Noxious weeds will be controlled using MDT's standard maintenance procedures.

G: DETERMINATION OF SECONDARY EFFECTS ON THE AQUATIC ECOSYSTEMS

Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials but do not result from the actual placement of the

dredged or fill material. The most significant secondary effect with this project would result from surface runoff. For this reason, a Highway Construction Standard Erosion Control Work Plan will be established to prevent surface runoff from transporting materials that could degrade water quality.

Another secondary effect is the possibility of accidental spills of hazardous materials during construction activities and the subsequent use of the facility. Any improvements to the existing highway that increase capacity and reduce congestion would decrease the chance of these accidental spills resulting from the use of the highway by vehicles transporting hazardous materials. Other secondary or indirect effects of the project are discussed in more detail in the EIS.

Section 4: Findings of Compliance

A: ADAPTATION OF THE SECTION 404(B)(1) GUIDELINES TO THIS EVALUATION

This evaluation is based on a conceptual and preliminary design of the project alternatives and identifies and quantifies the environmental impacts associated with the proposed action insofar as present design data allows. Before the project can be advanced to the design stage, the preferred alternative must be approved and a formal design for it must be developed and approved.

Some project specific information required for the Section 404(b)(1) evaluation might not be accurately predicted until final design plans are available. This draft Section 404(b)(1) evaluation also details two separate build alternatives (32-foot road and 36 foot road). When a single, preferred alternative is identified, this evaluation will be revised and a final Section 404(b)(1) evaluation will be prepared.

B: EVALUATION OF AVAILABILITY OF PRACTICAL ALTERNATIVES TO THE PROPOSED DISCHARGE SITE WHICH WOULD HAVE LESS ADVERSE IMPACT ON THE AQUATIC ECOSYSTEM

Section 230.10(a) of the Guidelines states “Except as provided under 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.” A discussion of the alternatives evaluated with respect to this requirement follows:

Alternative A- No Build:

Several of the culverts along the existing US 89 roadway are undersized and there are areas along the roadway where culverts are lacking. This limits the natural hydrologic regime of streams and wetlands within the road corridor. These conditions can, over time, reduce the functions and values of these wetlands systems, which would affect their ability to provide wildlife habitat. Under the no-build alternative, this impact would remain, but no new areas of wetlands habitat would be disturbed.

Alternative B- US 89 (9.75 m, 32 ft width):

Placement of fill in wetlands causes a reduction in some functions such as wildlife habitat, flood storage capacity, and groundwater recharge capacity. The magnitude of

this impact varies with the type of wetland affected, the amount of fill placed, the size of the overall wetland system, and the condition of the wetland system (disturbed or pristine). The following sections provide a brief qualitative and quantitative description of the effect of new construction on each wetland group identified in the project corridor.

Large Riverine Systems

Large riverine system wetlands, also known as large riparian systems, provide numerous important functions in the US 89 project corridor. These systems constitute the greatest amount of wetland acreage in the project corridor and, therefore, would incur the greatest impacts of the wetland groups. Under Alternative B, about 3.8 hectares (9.4 acres) of large riparian wetlands would be affected. Loss of these wetland habitats would result in a slight decrease in the function of these systems, primarily at the location of the impact. These systems are already affected by the existing road corridor, and for the most part, construction would maintain the existing alignments at these sites with a somewhat larger project footprint than the existing road.

Roadway realignments are proposed at W17, W18, W21, and W23. A slight realignment at South Fork Cut Bank Creek (W17) is required to replace the existing bridge, which currently restricts the natural width of the stream. The realignment and proposed widening would require relocation of a portion of the stream channel. The natural meandering of the channel at this location is restricted by the proximity of the existing roadway and has been affected by fill placed to provide parking. At Lake Creek (W18), the natural meandering of the stream is restricted by the alignment of the existing culverts. The realignment would include a bridged crossing and would result in an improvement over existing conditions. Realignments at W21 and W23 would relocate the roadway away from the wetland and adjacent stream channel, resulting in an improved condition at these sites.

Small Riverine Systems

Primary functions of small riverine systems include general fish/aquatic habitat, sediment/nutrient/toxicant removal, ground water discharge/recharge, and production export/food chain support. Operation of Alternative B would result in the loss of approximately 0.6 hectares (1.5 acres) of wetland habitat in this group. Impacts on the functions of these systems under Alternative B are expected to be localized at existing culvert crossings and minor when compared to the overall size of these riparian wetland systems.

Depressional Wetlands

Of the 31 depressional wetlands in the US 89 project corridor, 13 would be affected by Alternative B (W6, W8, W10, W11, W13, W16, W27, W29, W32, W35, W36, W47, and W48). Primary functions of depressional wetlands in the project area include migratory bird habitat and ground water discharge and recharge. The functions of these wetlands would be significantly decreased if one-third or more of the individual wetland is filled or excavated for the widened roadway. Under Alternative B the widened roadway would negatively impact five of the 13 depressional wetlands and would have minor effects on the remaining eight depressional wetlands. Alternative B would result in the loss of approximately 1.3 hectares (3.4 acres) of wetland habitat in this group.

Slope Wetlands

Four of the project wetlands are included in this group. Alternative B would result in the loss of approximately 0.7 hectares (1.8 acres) of wetland habitat in this group. The primary functions lost due to impacts on these systems include loss of secondary habitat for threatened and endangered species and loss of general wildlife habitat. Fill associated with roadway widening in W2 and W22 would have minor effects on these systems due to their large size and the location of the impact near the fringes of the existing roadway. Nearly half of W5 would be lost under Alternative B. Road widening would fill the edges of wetland 20. Because W20 extends outside the project corridor and the system is not identified on available maps, its overall size is difficult to determine. As stated previously, this wetland has been disturbed by residential construction and firewood gathering.

Alternative C- US 89 (11 m, 36 ft width):

Long-term impacts on wetlands would be similar to those described for Alternative B with the following additional impacts, discussed below.

Large Riverine Systems

Under Alternative C, about 4.5 hectares (11.0 acres) of large riparian wetlands would be affected, compared to about 3.8 hectares (9.4 acres) under Alternative B. Loss of habitat under both alternatives would have similar effects.

Small Riverine Systems

Operation of Alternative C would result in the loss of approximately 0.6 hectares (1.5 acres) of wetland habitat in this group. As described for Alternative B, impacts on the functions of these systems under both alternatives are expected to be localized at existing culvert crossings and minor when compared to the overall size of these riparian wetland systems.

Depressional Wetlands

Of the 31 depressional wetlands in the US 89 project corridor, 13 would be affected by Alternative C (W6, W8, W10, W11, W13, W16, W27, W29, W32, W35, W36, W47, and W48). The functions of these wetlands would be significantly decreased if one-third or more of the individual wetland is filled or excavated to accommodate the new roadway. Under Alternative C five of the 13 depressional wetlands would be negatively affected by the proposed road widening. Alternative C would result in the loss of approximately 1.4 hectares (3.5 acres) of wetland habitat in this group.

Slope Wetlands

Alternative C would result in the loss of approximately 0.7 hectares (1.9 acres) of wetland habitat in this group. Impacts on slope wetlands resulting from Alternative C would be similar to those described for Alternative B. However, Alternative C would result in a slightly greater amount of disturbance to these systems.

Option- Spot Improvements to Duck Lake Road, Alternative Route

Long-term impacts on wetlands would be similar to those described for Alternative B. The following sections provide a brief qualitative and quantitative description of the effect of new construction on each wetland group identified in the Duck Lake Road corridor.

Large Riverine Systems

Installation of a parking area would result in the loss of 0.2 hectares (0.4 acres) of riparian wetlands associated with W49 and Cut Bank Creek. Loss of this habitat would have effects similar to those described under Alternative B. Siting of this parking lot will be finalized during the final design stage. (Note that 0.4 acres of wetland fill for a parking area may not be eligible for a nationwide permit; also, unless there is a critical need to have a parking area in a wetland it will be assumed that there are other locations for this non-water-dependent project feature.)

Small Riverine Systems

Improvement of Duck Lake Road would result in the loss of approximately 0.6 hectares (1.5 acres) of wetland habitat in this group. As described for Alternative B, impacts on the functions of these systems under both alternatives are expected to be localized at existing culvert crossings and minor when compared to the overall size of these riparian wetland systems.

Depressional Wetlands

Two depressional wetlands (W50 and W51) were identified in the Duck Lake Road corridor. Potential impacts on these systems would be avoided.

C: COMPLIANCE WITH APPLICABLE STATE WATER QUALITY STANDARDS

Providing that the following permits are issued, the proposed project will be in compliance with the State Water Quality Standards:

- 1) A Montana Stream Protection Act Permit (124 permit) must be issued by the Department of Fish, Wildlife, and Parks of the State of Montana (MFWP). The purpose of the permit is to protect and preserve fish and wildlife resources in their natural existing state. MFWP will examine application information including projected impacts and determine if the proposed action can be approved. Issuance of the permit constitutes compliance.
- 2) The United States Environmental Protection Agency is responsible for water quality on the Blackfoot Indian Reservation. The USEPA regulates Water Quality Standards and will issue this permit.
- 3) The Montana Floodplain and Floodway Management Act will require Floodplain Development permits issued by the Floodplain Administrators of Glacier County. The purpose of this Act is to restrict floodplain and floodway areas to uses that will not be seriously damaged or present a hazard to life if flooded, therefore limiting the expenditure of public tax dollars for emergency operations and disaster relief. The application for the permit provides specific engineering information to evaluate impacts. Approval of the application and issuance of the permit. (Note that Section 404 requires compliance with any applicable FEMA-approved state or local floodplain requirements, whether a floodplain permit is issued or not. In other words, a floodplain permit might be issued for the work, but if the work proposed is clearly in violation of the local regulations a 404 permit can't be issued.)

4) The project will require a National Pollutant Discharge and Elimination System permit from the Environmental Protection Agency (USEPA). The purpose of this law is to minimize soil erosion and sedimentation, therefore maintaining water quality and protecting aquatic resources and satisfies Section 402 of the Clean Water Act. Specific plans for stormwater pollution prevention will be developed and submitted for review by USEPA, demonstrating how and where best construction management practices will be used to minimize adverse impacts to aquatic resources. Approval of the plan and establishment of such additional conditions as may be necessary through issuance of the permit constitutes compliance.

5) Section 401 of the Clean Water Act requires that the US EPA certify that any discharges into Waters of the United States comply with water quality standards before Federal permits or licenses are granted. A 401 permit is required prior to 404 permit approval. The purpose of this law is to restore and maintain the chemical, physical, and biological integrity of surface waters. The US EPA will review plans for construction of a given project as well as reviewing the status of other permits requested from and issued by other agencies before approving the proposal. Issuance of the 401 Water Quality Certification constitutes compliance.

6) The project will also require an Aquatic Lands Protection Ordinance 90-A permit from the Blackfeet Tribe. Comprehensive protection of aquatic lands on the Blackfeet Reservation is critical to the preservation of fish and wildlife, the maintenance of water quality, and the maintenance of a strong and vital Reservation environment. The Ordinance 90-A permit ensures that the degradation of Reservation waters and aquatic lands be prevented or minimized through the reasonable use of available resources.

In all cases, review of proposed plans and possible impacts associated with implementation of the preferred build alternative may require agencies to request modification of the design, implement mitigation measures, or meet other specific requirements before compliance is achieved through permit issuance. Strict adherence to the permits and their associated provisions and conditions constitute compliance during construction and after for the life of the improvements. Unapproved deviations or non-adherence to these conditions would constitute non-compliance with the law, requiring the owner to take corrective action or face associated penalties or civil action.

As long as acceptable construction practices and design are followed, the acquisition of these permits should be fairly routine. Best Management Practices will be identified using MDT's Highway Construction Standard Erosion Control Work Plan to ensure compliance with the State of Montana's Pollutant Discharge Elimination System regulations.

The project is in compliance with the following federal water quality standards:

a) **Clean Water Act, as Amended (Federal Water Pollution Control Act), 33 USC 1251 et seq:** The project is in compliance. Although Section 404 permit processing has not been initiated, the US Army Corps of Engineers and the US Environmental Protection Agency will be contacted for early coordination to allow for proper planning in order to meet all requirements.

b) **Fish and Wildlife Coordination Act, as Amended, 16 USC 661, et seq:** In compliance. The Montana Department of Fish, Wildlife, and Parks, the Blackfoot

Tribe and the US Fish and Wildlife Service will be contacted and their comments incorporated into the EIS.

c) **Floodplain Management (Executive Order 11988):** In compliance. The project will be designed to not have significant effects on floodplains.

d) **Protection of Wetlands (Executive Order 11990):** In Compliance. The project will involve work below the ordinary high water line. The project will take the appropriate measures to first avoid, then minimize, then to provide compensatory mitigation for all impacts that cannot be avoided.

The following federal water quality standards are not considered to be applicable to this project:

a) **Coastal Zone Management Act, as Amended, 16 USC, 1531, et seq:**

This Act is not applicable because the project does not involve a coastal zone.

b) **Estuary Protection Act, 16 USC, 1221, et seq:** This Act is not applicable because the project does not involve an estuary.

c) **Federal Water Project Recreation Act, as Amended, 16 USC, 460-1(12), et seq:** This Act is not applicable because the project is not considered to be a water recreation project.

d) **Marine Protection, Research, and Sanctuaries Act 33 USC, 1401, et seq:** This Act is not applicable because the project does not involve the discharge of material into the ocean.

e) **Rivers and Harbors Act, 33 USC, 401, et seq:** This Act is not applicable because the project would not place obstruction in a navigable waterway.

f) **Watershed Protection and Flood Prevention Act, 16 USC, 1101, et seq:** This Act is not applicable because the project does not involve the construction of dams in an upstream watershed.

D: COMPLIANCE WITH APPLICABLE TOXIC EFFLUENT STANDARD OR PROHIBITION UNDER SECTION 307 OF THE CLEAN WATER ACT

Section 307 of the Clean Water Act imposes effluent limitations on discharge of materials containing toxic pollutants into surface waters, specifically aldrin/dieldrin, several DDT compounds, endrin, toxaphene, benzidine, and polychlorinated biphenyls (PCB). The project will not discharge any of these specified toxic pollutants; therefore it will be in compliance with Section 307 of the Clean Water Act.

E: COMPLIANCE WITH ENDANGERED SPECIES ACT OF 1973, AS AMENDED

A Biological Assessment (BA) in accordance with section 7(a) of the federal Endangered Species Act of 1973 is currently being completed. The BA will address specific impacts to threatened and endangered species, and will include any affect that the proposed

project will have on any threatened or endangered species in the project corridor. The US Fish and Wildlife Service will review the BA and determine the accuracy of its conclusions. The biological opinions will be included, along with concurrence from the Services once complete.

F: COMPLIANCE WITH SPECIFIC MEASURES FOR MARINE SANCTUARIES DESIGNATED BY THE MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT OF 1972

Due to the fact that this project does not involve the ocean, this Act is not applicable.

G: EVALUATION OF EXTENT OF DEGRADATION OF THE WATERS OF THE UNITED STATES

Each of the following sections have previously been discussed in this evaluation. The following statements represent the conclusions of these discussions.

1) Significant Adverse Effects on Human Health and Welfare: This project will not adversely affect municipal or private water supplies, recreation and commercial fisheries, aesthetics, or water-borne disease rates. Although temporary water quality degradation associated with turbidity and sedimentation would occur during construction, no long-term adverse impacts on water quality or the human environment are anticipated.

2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependant on Aquatic Ecosystems: Short-term temporary disruption to wildlife habitat, benthos, invertebrates, vertebrates, photosynthesis, plankton and sight-feeders are expected to result from the turbidity and sedimentation caused by construction. However this project will not significantly or adversely produce long-term effects on the life stages of aquatic organisms or other wildlife dependant on aquatic ecosystems.

3) Significant Adverse Effects on The Aquatic Ecosystem, Ecosystem Diversity, Productivity, and Stability: This project will not produce significant adverse effects on the diversity, productivity, or stability of the aquatic ecosystems in the project area.

4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values: This project will not have a significant adverse effect on the recreational, aesthetic, or economic value of any waters of the United States or aquatic ecosystems in the project area.

H: APPROPRIATE AND PRACTICABLE STEPS TAKEN TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE DISCHARGE ON THE AQUATIC ECOSYSTEM

The measures taken to minimize the adverse impacts of the discharge on the aquatic ecosystems have previously been described in this evaluation. To summarize, the most significant impact of the proposed project would be erosion of disturbed areas producing increased levels of suspended sediments and turbidity in the surface waters. To minimize these adverse impacts during and after construction, a Highway Construction Standard Erosion Control Work Plan will be established to identify and assure implementation of Best Management Practices. General steps to minimize adverse impacts include:

- 1) Ensure that the project conforms to the natural existing characteristics of the aquatic ecosystem and surrounding terrain.
- 2) Limit the duration and the amount of area of disturbed land.
- 3) Restore and reseed or revegetate the disturbed areas as soon as practicable.
- 4) Control storm runoff by reducing velocities, retaining sediments, and properly maintaining erosion control features.
- 5) Ensure proper maintenance of erosion control structures and methods.
- 6) Time disturbances of the aquatic ecosystem to avoid sensitive periods such as breeding, migration, etc.
- 7) Emphasize the avoidance, and the minimization of unavoidable impacts to wetlands before considering compensatory mitigation of wetlands.
- 8) Assure perpetuation of wetland functions.

I: CONCLUSIONS

The proposed project is currently evaluating two build alternatives. Additional alternatives that were considered are detailed in the Draft EIS. A preferred alternative will be chosen after issue of the Draft EIS and input is received from the public and involved agencies.

The proposed project will not violate state water quality standards, Section 307 of the Clean Water Act, or water quality standards for the Blackfeet Tribe. The proposed project will not violate the Endangered Species Act of 1973 (ESA). The Biological Resource Report, which will serve as the Biological Assessment under Section 7(a) of the ESA, further details potential impacts to federally listed threatened and endangered species.

No discharge of dredged or fill material would cause significant degradation to waters of the United States. Any impacts would be temporary, and limited to the time of construction.

This evaluation and the Draft EIS detail all appropriate and practicable steps that have been taken to first avoid, then minimize, then compensate for all areas of wetlands that would be impacted by the proposed project.

On the basis of the guidelines, the proposed disposal sites for the direct discharge of dredged or fill material are specified as complying with the requirements and the guidelines, with the inclusion of appropriate and practicable conditions to minimize pollution or adverse effects on the aquatic ecosystem.

APPENDIX F

Cooperating Agency Correspondence

**RECEIVED**

APR 29 2003

ENVIRONMENTALREPLY TO
ATTENTION OF

U.S. ARMY CORPS OF ENGINEERS

HELENA REGULATORY OFFICE
10 WEST 15TH STREET, SUITE 2200
HELENA, MONTANA 59626

April 24, 2003

**MASTER FILE
COPY**Helena Regulatory Office
(406) 441-1375 Phone
(406) 441-1380 FaxSubject: Corps File Number 2000-90-010
US 89 - Browning to Hudson Bay Divide
Project Numbers STTP 58-1(19)0 and STTP 58-1(20)12
MDT Control Numbers 4045 and 4047**RECEIVED**

MAY 02 2003

Skillings-Connolly, Inc.
Consulting EngineersJean A. Riley, P.E. - Engineering Section Supervisor
Environmental Services Bureau
Montana Department Of Transportation
2701 Prospect Avenue
PO Box 201001
Helena, Montana 59620-1001

Dear Ms. Riley:

Reference is made to your April 22, 2003 request for the US Army Corps of Engineers to be a Cooperating Agency on the proposed US 89 - Browning to Hudson Bay Divide highway reconstruction project. The project is located near Browning on US Highway 89, and is located entirely on the Blackfeet Indian Reservation in Glacier County, Montana.

Under the authority of Section 404 of the Clean Water Act, Department of the Army permits are required for the discharge of fill material below the ordinary high water mark of our nation's rivers, streams, lakes or in wetlands.

Based on the information provided, we have agreed to be a cooperating agency on this project. Our involvement will be limited to project features that will or may affect Waters of the United States.

As a reminder, because this project is located on the Blackfeet Indian Reservation, the United States Environmental Protection Agency will be responsible for providing Section 401 Water Quality Certification for this project.

Please direct all future inquiries and any questions you may have to Todd Tillinger of this office at (406) 441-1375, and reference Corps File Number 2000-90-010.

Sincerely,

Allan Steinle
Montana Program Manager



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Rocky Mountain Regional Office
316 North 26th St.
Billings, Montana 59101

RECEIVED

MAY 02 2003

Skilling-Cannolly, Inc.
Consulting Engineers

IN REPLY REFER TO: Environmental Services - 160

APR 25 2003

Jean Riley
Montana Department of Transportation
PO Box 201001
Helena, Montana 59620-1001

Dear Ms. Riley:

The Bureau of Indian Affairs will participate as a cooperating agency in the US 89, Browning to Hudson Bay Divide highway project. We strongly suggest that notification be provided to the Blackfeet Tribe and Blackfeet Agency Office.

The contacts for these entities are shown below. I will remain the contact for the Regional Office and my address remains as per the letterhead.

Blackfeet Tribal Business Council
P.O. Box 850
Browning, MT 59417

Ross Denny, Superintendent
Blackfeet Agency
Box 880
Browning, MT 59417

Sincerely,

Chief, Environmental Services

cc: Superintendent, Blackfeet Agency
Chairman, Blackfeet Tribal Business Council